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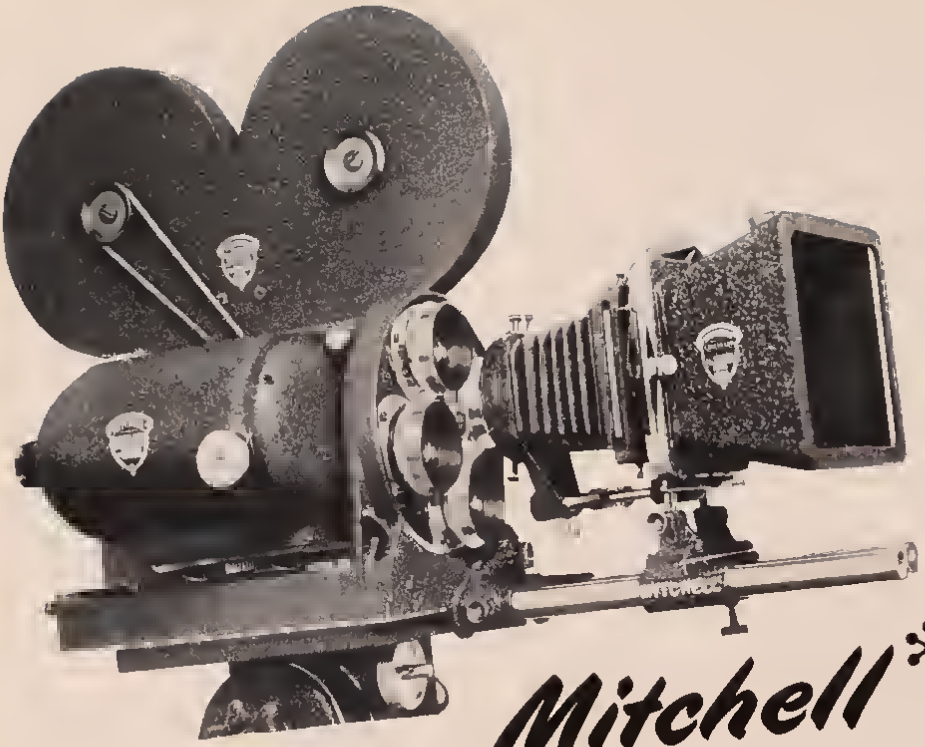

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AMERICAN CINEMATOGRAPHER

THE MOTION PICTURE CAMERA MAGAZINE

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ON THE FRONT COVER—Linda Darnell and Cornel Wilde ready for a scene in the Twentieth Century-Fox Technicolor production "Forever Amber." Directory of Photography Leon Shamroy, A.S.C. is seated in front of camera, with director Otto Preminger on his left

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ACES of the CAMERA

LUCIEN ANDRIOT, A. S. C.

By W. G. C. BOSCO

LUCIEN ANDRIOT came to this country from Paris. He was only sixteen years of age when he arrived in New York, but he had already had more than a year of experience working in a motion picture laboratory in France and came to these shores as part of the lab staff of the Eclair Film Co. when those French pioneers decided to open a branch on this side of the Atlantic.

Undeterred by extreme youth, his ambition soon reached out of the lab to encompass broader horizons. Lucien became a cameraman, shooting one-reelers which he then had to develop, print and sometimes project, himself.

With the advent of the first World War he joined the American Army and was assigned to the Photographic Division of the Medical Corps, a classification which, it seems, was not reactivated during the recent fracas. During those war years he met for the first time other men who were destined to become important members of the motion picture industry— among them Lewis Milestone, Wesley Ruggles, Richard Wallace, and Len Smith, A.S.C.

When the war was over, motion pictures, which still had a long way to go, had at least come out of their swaddling clothes. The screen began to make its bid for popular recognition in the field of entertainment by turning out some pictures which, considering the handicaps in the light of today's technical developments, were superb and definitely gave the medium the impetus it needed toward the recognition it sought. One of these early films was a picturization of Mark Twain's classic, "A Connecticut Yankee in King Arthur's Court," produced by William Fox in 1920.

This first production of the famous Connecticut Yankee, not to be confused with the later production starring Will Rogers, was photographed by Lucien Andriot on the Western Avenue stages of the old Fox lot. Rather, it was shot partly on the stages. What actually happened was that the production planning had been over ambitious and had failed to take into consideration the size of the stages. The result was that the stage provided only enough space for the background, the rest of the set and most of the action overflowed on to the lot where, someone fondly imagined, the sunlight could be used to light the foreground action and made to match the artificial light used on the back part of the set that was enclosed within the stage.

No amount of persuasion on Lucien's part could convince the originators of this idea that the set-up was photographically impossible. But, after learning the hard way, they finally permitted him to enclose the exterior half of the set in a tent. The resulting conditions were then far from perfect, but the final product turned out to be a tremendous success. The screen presented a popular classic in, for those days, an extravagant setting and stars Harry Myers, Rosemary Theby and Pauline Stark, and cinematographer Lucien Andriot were on their way to fame.

Of particular note at the time, due to the sympathetic reception by producers and public alike of "trick" photography, was the spectacular opening Lucien contrived for the "Connecticut Yankee," a scene in which an actor representing the author turned the pages of his book out of which walked the characters made famous in the story. Not much of a trick by today's stand-

(Continued on Page 72)

Recent Developments In Photographic Optics

By Dr. Wilbur B. Rayton

(Editor's Note: This most informative and enlightening discussion on optics and lenses was presented by the late Dr Rayton before members of the American Society of Cinematographers at the A S C clubhouse on the evening of October 28th, 1946. This was the last paper delivered by Dr Rayton before his sudden passing three days later in San Francisco. His position as one of the world's most outstanding authorities on optics and lenses for motion picture engineering is widely recognized.)

MR. PRESIDENT, Mr Chairman, fellow members of A S C., I have often wished to meet with you. I have been in Hollywood many time and for one reason or another I has never seemed to find the time to even get into the building. I really took great pleasure in Mr Clark's invitation to come here tonight, in spite of the fact that I had no carefully prepared story to present. Had I known about this in Rochester, it is conceivable that I might have had more material to illustrate what I might talk about. We will just have to have a little informal conversation on the subject of new developments in motion picture lenses and perhaps related equipment.

I think we might cover the subject in three sections. First, the question of lens design. Perhaps you are not greatly interested, but there is one modern development that concerns design which I shall have to lead up to gradually.

One of the fundamental difficulties with a lens is the fact it has different focal lengths for different colors. One of the very first steps in the development of what we now think of as corrected lenses was to get rid of that color. Very early it was discovered that if a certain equation was satisfied relating the optical constants of the glass and the focal lengths of the two elements of a combination mounted close together, then chromatic dispersion could be corrected and the lens would have the same focus for two different wave lengths, and very nearly the same focus for all others.

Considerably later than that time, men struggling with the problem of what was wrong with the image formed by a lens identified one defect and named it curvature of field. About 100 years ago an Austrian, Josef Petzval, was led to another equation, which, if satisfied, would produce a lens that had no curvature of field. His equation also connected the optical properties of the glass and the focal lengths of the elements. With the glasses then available it was impossible to satisfy those two equations simultaneously achromatic—i e, free from color aberrations and with a flat field.

In the 1870's Professor Abbe began his very fruitful work in the field of optics. He, struggling with these equations, came to the conclusion that if a glass existed different from any that had then been known, it would be possible to satisfy both of these conditions. He interested the maker of chemical glassware and lamp chimneys, Dr. Schott, in the problem, and between them they developed some glasses that have since been known as Jena glasses. They differed considerably from glasses previously available as they had higher indices of refractions for low dispersions. The glass is characterized by two constants generally. One, its index of refraction, represented, for example, by "n," and another constant that prescribes how much the index of refraction differs with wave length. A particular ratio is set up. It is the ratio of the index of refraction for yellow light minus unity divided by the difference in the indices of refraction for the red and blue. That quantity has been characterized by a Greek letter which is pronounced in English as "new."

The difference between the new glasses developed by Dr. Schott and Professor Abbe and older glasses was that for a certain nu-value the new glasses had a higher index of refraction than had been previously available.

The availability of these glasses then led to the modern anastigmat lenses, the development of which began along in the 90's. I think the first one was dated about 1890. From 1890 to 1910 was the

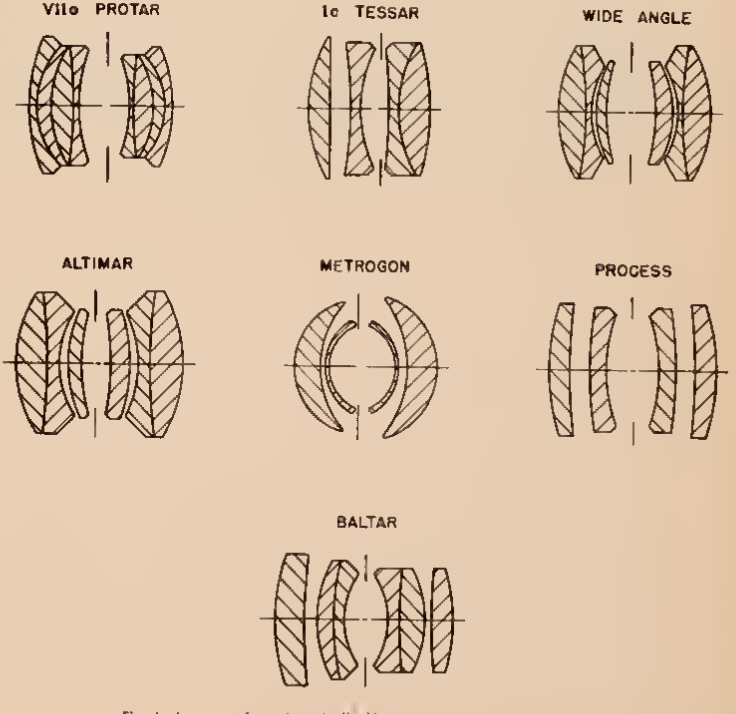

Fig. 1. A group of anastigmats (highly corrected photographic lenses).

period of development of lenses of new types

If I may have the first slide (Fig 1)

This slide shows several lens types, not all of them by any means. It just represents a group of various types of lenses, all of them anastigmats. The first one in the upper left corner is a convertible lens in the sense that either half may be used by itself and it can be used in combination. The next in the upper line is the well-known Tessar, then comes a construction that gives an angle of about 80 degrees, a very good definition at about f/8. On the middle line, the first lens on the left is a 70 degree lens with the speed of f/4, and the middle lens is a 90 degree lens with a speed of f/6.3; it is the well-known Bausch & Lomb Metrogon, extensively used for aerial photography. The one on the right is a process lens and the one on the bottom is a motion picture high speed lens.

Now you will observe that the lens at the upper right, the one at the left of the middle line, the one at the bottom, are all very much alike (although there are differences, and there is a resemblance in the case of the metrogon and the process lens), in that they all consist of four components, all of which are in general meniscus in shape, mounted around a diaphragm. The origin of this type of lens traces back, in my thinking, to the design of a telescope objective. That lens was designed by a mathematician by the name of Gauss. Two of them put together around a diaphragm led to a lens that was proposed and patented by Alvan Clark, America's most celebrated optician, manufacturer of the big telescope at Yerkes and Riggs Observatory.

The next step in the development was the Planar of Dr. Rudolph, about 1895, which was a lens much of the order of the Baltar in general appearance and from which many lenses have been derived, in England and Germany and in this country. They differ from each other with respect to speed and field coverage, and these differences are brought about largely by different glass combinations.

Now the question is, why should we have so many different glass combinations. I meant to say many different lens constructions. The answer is because there is no mathematical equation or set of equations that can be written down to describe a given number of conditions and to find one best answer to the problem. The design of lenses is arrived at still very largely by cut and try methods, by intuition, you might say, and imagination on the part of the lens designer.

Now all this leads up to the question of what are we going to do in the way of furthering the work done by Dr. Schott. You probably have read in advertising literature and in the public press, stories of new glasses that have been developed over recent years. These glasses are an extension of the work of Dr. Schott. They have higher indices of refraction than those obtained before and give the lens designer that much more to work with. It is nothing new in basic principle; it is an extension of what we were already doing.

In addition to the new glasses there are other materials that might be thought of in lens design. There are synthetic crystals. One of them is called Beta magnesia. It is a magnesium oxide or combination of magnesium oxide and other oxides. Another is spinel, a mineral that is a magnesium-aluminum oxide. These have astonishingly high indices of refraction and rather low dispersions. They have the further advantage of being very, very hard, physically hard and chemically hard. They are not commercially available in optical quality. But there is, perhaps, reason to think that the future will bring these materials, and I am sure the lens designer can make good use of them if he has them.

During the war fluorite was made artificially for the first time. Fluorite is a very interesting optical material. It has an exceedingly low dispersion, lower than any other material available for optical work and that is a real advantage, although in this case it is unfortunate that it is coupled with an index of refraction that is too low. It is very difficult to design a lens with a flat field in which fluorite is used. But for lenses of very small field of view, it makes possible a design of a really apochromatic lens—i.e., a lens that forms images in the same plane for three different colors. Strictly speaking, there is up to this time, no photographic lens that can do that.

So we have great hopes for the future for what may possibly be accomplished with these new materials.

And then, too, of course, we have all heard of plastic lenses. Plastics will be used when they have any advantage over glass. Their only advantage, perhaps, that was thought of during the war, was cheapness. But I think experience shows that to make a lens that compares in optical performance with a glass lens, and make it out of plastic, costs as much as it does to make it out of glass. Furthermore, it hasn't the durability of glass, and from the designers' standpoint this is a very poverty-stricken field of materials in which to work. We have hundreds of kinds of glass to two kinds of plastic suitable for optical design.

So much for design.

After you design the lens and make it, it can still be ruined in mounting, and we have been thinking of new methods of mounting. I think perhaps some of you were at the meeting of the S M P E and saw this slide. Nevertheless, I will ask for the second slide (Fig. 2).

This is the plane of the diaphragm (E). The usual method of mounting is to mount this diaphragm in a barrel that is threaded on the front and back; to mount the front half and the back half of the lens in independent mounts that screw into the threaded barrel. It is a very difficult thing to get all those

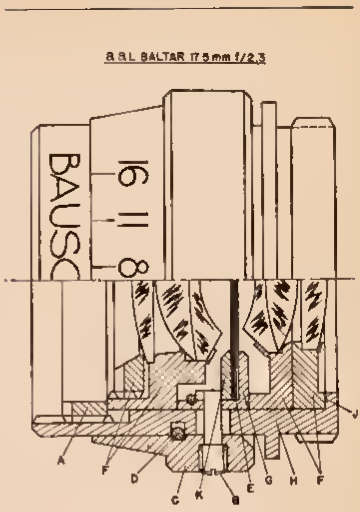

Fig. 2. A precision mount for short focus Baltars.

threads on a common axis. This sketch illustrates a method of mounting that we have used in mounting microscope lenses with a great deal of success for many years, and recently have introduced a similar mounting for motion picture lenses of short focal lengths. Each component is mounted in a separate cell (F). The diaphragm is mounted in a housing (G). The cells and the diaphragm housing are turned to the same diameter and pushed into a sleeve that can be very easily machined to a true cylinder, constant in diameter. Naturally, these have to fit very well. There is no point in doing this if there is any sloppiness in the fit of these cells in the barrel.

This is a shoulder (J) by which the whole system is located, and that is a retaining ring (A) which screws the whole thing together and holds it in place. This is the diaphragm actuating ring (C). It is slipped over the front and engages this spring ring (D). The actuating pin (B) is screwed into (C) with a screwdriver, and it projects through the barrel (H) into a slot in the diaphragm ring (K). Our experience with this type of mount is that it holds lenses centered better than any other style of mount with which we have ever experimented.

Now the second point in which developments have been made in recent years is the application of films to the surfaces of the lenses. Now I am pretty sure you must be rather well bored with the story of antireflection films. These thin films have other possibilities than simply reducing the reflection from lens surface, so we will give a few minutes to this subject.

(Continued on Page 54)

Photographic Highlights Of 1946

By GLENN E. MATTHEWS

(Technical Editor Kodak Research Laboratories Rochester New York)

[illegible] (Collier's National Year Book. P F Collier and Son Corp N[illegible])

THE most photographed event of all time was the atomic bomb tests on July 1 and 25 in Bikini lagoon in the Pacific. At each of those tests, more than 500 cameras were used; these included miniature type cameras using 35-mm film, press cameras, motion picture cameras using 16-mm and 35-mm films, and many types of aerial cameras with lenses as great as 48 inches in focal length During the two tests, more than 100,000 photographs were made and over three million feet of motion picture film was exposed, and this did not include the many thousands of pictures taken by the press.

In order that the different phases of the explosion could be studied later, many records were made with high speed cameras using color films. The cameras were located in batteries on high steel towers around the lagoon, in airplanes, on destroyers and target ships. Cameras were also used on several "drone" airplanes Many of the cameras were operated by electronic controls from remote stations The first few milli-seconds of the explosion were recorded with a special ultra speed streak camera.

Besides the explosions, many photo-records were made before and after the tests, included in the latter group of pictures were underwater records made with special waterproof cameras and lamps to show under-water damage to ships Study of these thousands of photographs was expected to reveal much valuable information on the effectiveness of this powerful weapon

Rocket Photography

Numerous photographic tests were made at White Sands, New Mexico, by the U. S. Army from high speed rockets of the V-2 type. A typical installation for one of these tests was eight gun-type electrically controlled cameras using 16-mm. film. Successful pictures were made from a record height of 65 miles above the earth. The rocket continued on upward to a height of over 100 miles but the vibration was so great that the pictures taken above 65 miles were blurred (Fig 1) Several of these photographs were reproduced in the magazine *Life*, for December 2, 1946

Figure 1 The earth from altitude of 45 miles, photographed by camera installed in a V 2 type rocket

Spectograms of the sun were also made with a special spectograph built by Bausch and Lomb Optical Company and installed by the Applied Physics Laboratory of Johns Hopkins University in a rocket that was fired on October 10 (Fig 2)

On the night of December 17, another rocket rose to the record height of 114 miles A camera installed in it made photographs of the exhaust flames and incandescent fins of the rocket These pictures will be used to study the effect of the atmospheric constituents on combustion of fuel at this high altitude

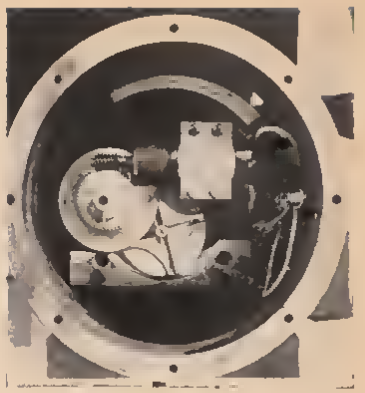

Figure 2 Rocket Spectrograph for recording sun's spectrum during rocket flight End view, showing film cassette Geneva wheel mechanism and tiny electric motor for turning interior rotor for eight exposures of ultraviolet sensitive film

Such experiments were expected to reveal much useful information about conditions in the upper air around the earth

Photographic Manufacture

Although the manufacture of sensitized photographic materials and equipment reached an all-time high for production in a peacetime year, consumer needs were so great that dealers seldom received enough photographic materials to satisfy the demand Strikes in various industries, especially the steel and coal strikes, held up delivery of metal stocks to many firms, including the photographic manufacturer, and production of some types of apparatus was slowed up

Nevertheless, quite a number of cameras, projectors, exposure meters, flash bulbs, and miscellaneous accessories were marketed Twin-reflex cameras were manufactured by several firms Older models of roll film cameras and miniature cameras using 35-mm film were made available again A stereoscopic miniature camera called the "Stereo-Realist" was advertised It was equipped with a matched pair of f/3.5 coated lenses, a range finder, and a synchroflash shutter. The stereo transparencies were examined with a twin-lens viewer having a built-in lamp A device called the Harrison Color Temperature Meter was sold for use in measuring the color temperature of various light sources The unknown source was viewed through various filters arranged on a revolving disk.

Several types of equipment that were developed during the war were being adapted to peacetime use A camera that exposed 4 by 5-inch pictures automatically at the rate of two per second was being used by the Associated Press, it was known as the Fairchild Sequence Camera

The use of high intensity stroposcopic flash units was being extended Several types of these units were marketed under such trade-names as Kodatron, Electroflash, Electronic Flash Gun, Amglo, Everflash, and Flash-Tronic One flash gun, known as the Dyna-Flash Synchrogun, had a small built-in a c generator, another called the Magnaflash was actuated by a magnet

Other adapted war developments were a compact film tank for daylight processing of either 16-mm or 35-mm motion picture films, printers for photographic paper which used "cold light" Argon lamps for making the exposure; film dryers, and print straighteners

Comparatively few new films or papers for black-and-white photography were announced during the year A new motion picture film for photographing a television monitor tube was described by White and Boyer in the August issue of the *Journal of the Society of Motion Picture Engineers* This film could be used as a negative or, if processed by reversal, as a positive A light sensitive emulsion for coating on plastic, metal, wood, and other surfaces was announced for sale by the Glenn L Martin Company, Baltimore It was recommended chiefly for use for the reproduction of drawings A contact printing photographic paper known as Devolite could be used in rooms with daylight or electric illumination Exposure was done with the paper held a few inches from an ordinary 100-watt bulb

A rapid processing, fast-drying paper used during the war for making charts and maps was marketed under the name, Resisto, by Eastman Kodak Company A new warm-tone paper called Charcoal Ember was announced by the Dassonville Company According to an article in the June issue of *Camera* (Baltimore) sepia prints could be made directly from color transparencies on a paper called Grant Panchroreversal

Special Types of Equipment

Checks and documents could be photographed on both sides simultaneously with a new microcopying camera known as the Duplex Recordak which was marketed early in the year A new cartographic camera manufactured by the Fairchild Camera and Instrument Corporation was designed to take lenses of three focal lengths, 5 2-inch, 6-inch, and 8 25-inch It was operated either automatically or manually and intended for topographic or planimetric mapping (Fig 3). Orthographic and isometric projections of objects could be made with the Cooke Orthocamera which had a very large lens highly corrected for spherical aberration The camera was used to photograph objects whose width was equal to or less than the diameter of the lens

An instrument for the rapid production of photographic records was described in the September issue of the *Journal of the Franklin Institute* It was designed to photograph a transient

Figure 3 New Cartographic Aerial Camera equipped with between the lens shutter operating at 0 01 second 0 02 second and 0 03 second and also a focal plane shutter Three lenses of 5 2 6 and 8 25 inches respectively It takes pictures 9 x 9 inches

image on an oscilloscope tube face, develop the image, and project it very much enlarged onto a screen, all in the short time of 15 seconds A fine grain positive 16-mm film was used (Eastman Type 5302) and the processing solutions were heated to 140 F Equipment of this type will probably have uses in the fields of television, documentary reproduction, and industrial processes

Several types of radar cameras were described which consisted essentially of an optical system and film holder that recorded the image on the oscilloscope face By this means permanent records were made of the transient image on the scope (Fig 4)

At the December meeting of the Rochester Technical Section of the Photographic Society of America, Colonel Goddard of the Army Air Forces described a new aerial camera having a focal length of 100 inches To avoid the excessively long housing that would result from a straight light path two mirrors within the housing bend the light rays so that the overall size of the camera is only about 4 by 4 feet

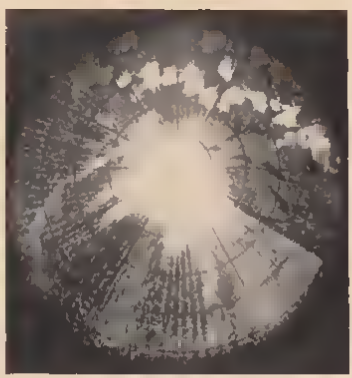

Figure 4 Radar Scope photograph of a tropical typhoon made on the USS aircraft carrier Ticonderoga

Color Photography

More color films and printing materials were available for general use than had been in dealers' stocks for several years. Public demand for color materials was so great, however, that manufacturers found it difficult to meet it even with increased production

One of the most important developments of the year was the announcement in August of a new color sheet film called Ektachrome that could be processed by the user to give a positive color transparency This product was derived from the Kodacolor Aero Reversal film that was introduced in 1940 and used throughout the war as a color reconnaissance film by the armed forces The new film is particularly suitable for commercial illustrative photography The announcement of the film was said to have been held up for some time while research chemists worked out a new color developer that is far less likely to give skin irritation than hitherto known color developers, or even than ordinary developers in normal use Total processing time to obtain a transparency is 90 minutes

For color prints from Ektachrome, Kodachrome, and other color transparencies, the Eastman Kodak Company recommended their Dye Transfer Process which uses a tanning developer, special dyes for rapid transfer, mordanted paper, and a simple device to insure accurate registration of the three images

Color prints from color transparencies were being made commercially by several firms in the United States For such work, Pavelle, Inc., New York, and the Technifinish Laboratory, Inc., Rochester, used Ansco Printon, a reversal integral tripack material coated on white acetate support Eastman Kodak Company continued to supply Kodacrome prints (formerly called Minicolor), and Kodachrome Professional prints (formerly called Kotavachrome)

Ansco Color roll film was placed on the market in March by the Ansco Division of the General Aniline and Film Corporation which had previously introduced other color products including a sheet film for making color transparencies, a 35-mm film for use in small cameras, a 16-mm motion picture film, and a color printing material The properties of three new Ansco 35-mm color films for professional motion pictures were described in the May issue of the *Journal of the Society of Motion Picture Engineers*

The composition of Agfacolor film and methods of processing it were disclosed in reports of military investigators in Germany Between 1940 and 1945, thirteen feature-length, and about fifty short-subject motion pictures were made by the Agfacolor negative-positive proc-

(Continued on Page 70)

MOOD IN THE MOTION PICTURE

By HERB A. LIGHTMAN

OF THE thousand and one elements that go into the filming of the modern photoplay, one of the most important, but perhaps least understood, is cinematic mood.

This intangible factor exerts a powerful influence upon an audience's reaction to a film, and consequently upon that film's ultimate success at the box-office. Simply explained, the function of *cinematic mood* is to create a kind of psychological setting in which the audience-mind is stimulated to move about and explore the deeper meanings of the screen story. In this way, the audience is drawn more closely into the action of the film, experiencing its impact almost as participants. The creation of such *emphatic response* is the most important function of mood in the motion picture.

How Mood Is Achieved

It is difficult to set down in specific terms how an element as elusive as *mood* is created. The process does not follow clear-cut rules, and it is not entirely due to any single phase of production, but rather to a forceful blending of all of them, script, direction, camera, action and cutting. However, it is possible to say that the factor which contributes most directly and most forcefully to the synthesis of cinematic mood is the motion picture *camera*.

Aside from the physical tools such as lenses and film, the materials which the Director of Cinematography uses to create the illusion of mood are lighting, angles and camera movement. Of these, lighting is the most fundamental, since it is the interplay of light and shadow that determines the photographic key of the scene.

High-key lighting, characterized by brilliant source light with strong *fill*, produces a light airy mood especially adaptable to comedy themes and action drama. *Low-key*, consisting of a predominance of dark tones with softly-lit highlights, creates a richly dramatic mood especially suited to love, mystery and suspense stories.

In the *low-key* pattern, shadow and silhouette play a major role. Shadow suggests the unknown and, correctly used, can be built up into an almost tangible force threatening the protagonist. By playing down all but the most important areas of action, a more forceful emphasis is produced. Silhouette, too, is a device which, because of the detail it *omits*, places greater emphasis upon the background, upon more brightly illuminated players in the scene, or upon the dialogue—as the case may be.

Camera angle represents the point-of-view from which the audience, by means of the camera lens, is led to perceive a specific bit of action. The selection of that angle can do much to condition the mood of the scene. Viewed from above, for example, an action sequence takes on an epic sweep; while, viewed from a low angle, the same sequence gathers force through an optical distortion that makes the players seem to loom into the composition. Their height is accentuated; they dominate the frame.

Generally speaking, a high angle places the audience in an omniscient position, minimizes the players as individuals, and clarifies broad patterns of action. A low angle, on the other hand, accentuates the importance of the individual player, makes him overwhelm the audience, and lends striking force to more closely staged patterns of action.

Camera movement, too, is strongly conducive to mood in that it allows the audience to experience various points-of-view of the filmic situation, moving smoothly from one to another without interruption. Thus a continuous atmosphere is created and maintained.

Skillful contrast of light and shadow, plus dramatic composition contribute to the pure cinematic mood exemplified in the above scene from "The Long Voyage Home" strikingly photographed by Gregg Toland, A.S.C. This film faithfully captured the wistful yet dramatic atmosphere of the lives of sea faring men.

Various Approaches to Mood

Top-notch Hollywood cinematographers all recognize mood as an indispensable part of their craft, although each may have a slightly different approach to placing it on the screen.

Lee Garmes, A.S.C.—Director of Cinematography on such mood-filled pictures as "Guest in the House," "Love Letters," "Specter of the Rose," and "Duel in the Sun"—points out that mood is a mercurial element that cannot be recorded in cut-and-dried form in a script.

"The dominant mood of the picture is, of course, decided upon before a camera turns," he explains. "But it is not the kind of thing you can write down on a piece of paper and then forget about. Mood grows from scene to scene as you work. It is on the sound stage that you really sense the little subtleties of interpretation that will convey to the audience something over and above the impression created by the action and dialogue alone. From then on, it is a matter of adapting lighting, angles, and camera movement."

Garmes rather favors subjects which can benefit by low-key lighting. These include deeply emotional and psychological themes, as well as suspense stories. He is also partial to low angles in this type of film, being one of the few cine-

matographers who actually welcomes low-ceilinged sets Currently shooting Alfred Hitchcock's "The Paradine Case," he is using all of these approaches, plus his own particular style of softly diffused lighting to produce suspenseful mood

James Wong Howe, A S C, Director of Cinematography on such outstanding films as "Viva Villa," "Algiers," "Prisoner of Zenda," "Air Force," and "King's Row"—is of the opinion that mood depends primarily upon lighting

"Simplicity in lighting is the key to creating strong mood," he points out "A simple unified source of light will pack more punch than a larger number of lesser units scattered all over the set, each canceling out the effect of the other It is not necessary to have the players fully illuminated through every foot of film They should be allowed to move from full-light to half-light to silhouette as they would in real life It is in this way that camera mood becomes a fluid dramatic force"

Howe's concept of mood lighting was forcefully exemplified in "King's Row," a film which he photographed some years back The story was a violent emotional drama with strong phychological undercurrents It called for a mood of impending tragedy, even in the relatively gay sequences which preceded the dramatic climax

Cinematographer Howe accomplished this effect though the use of dynamic low-key lighting Several sequences were done in almost total darkness with only selected areas of the set being cross-lit with spotlights The players moved from dark to light areas, being brought into sharp relief at dramatic points in the action In one highly dramatic sequence, the set was completely dark, the sole illumination coming only from sporadic flashes of lightning outside the window.

Mood in "King's Row" was also enhanced through the use of wide-angle lenses in *pan-focus* effect In this way, foreground objects were made to loom importantly into the composition, not only in order to frame the background action, but to provide dramatic emphasis within the scene In one sequence, for instance, a hypodermic syringe (the motivating prop of that particular sequence) dominated the foreground and became the focal point of interest as the players in the background directed their action toward it

King's Row photographed by James Wong Howe A S C, utilized sombre low key lighting and forceful wide angle effects to produce a mood of impending tragedy In the above scene, everyone but the central figure is subdued so that audience attention is sharply focused upon him

The above scene from "Grapes of Wrath" illustrates realistic mood achieved through absolute simplicity in source lighting Filmed by Gregg Toland, A S C, this socially significant film profited strongly from documentary photographic approach

Fitting Mood to Theme

One of Hollywood's foremost mood experts is Gregg Toland, A S C, Director of Cinematography on such film masterpieces as "The Informer," "Grapes of Wrath," "Citizen Kane," and "The Long Voyage Home"

Toland is a versatile purveyor of mood, adapting his style of lighting and composition strictly to the requirements of the filmic theme. In "The Informer," for instance, he achieved a somber mood through the use of swirling fog, looming shadows, and sharp cross-lighting This mood grew in power through the use of striking close-ups in the climactic sequence

In "The Long Voyage Home," his skillful simulation of source lighting, plus a fine feeling for texture and form, lent a wistful yet powerful mood to this dramatic story of sea-faring men There were no false camera tricks, nothing that did not enhance the down-to earth, salty atmosphere of the film

"Citizen Kane" was notable principally for the number of revolutionary camera—to purposely create an unreal perspective of a man's life He did this with era techniques which it utilized Here Toland was told to go all out for effect

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The Cinema Workshop

(For Semi-Professional and Amateur Production)

8. Lighting For Special Effect

By CHARLES LORING

DEPARTING from standard lighting set-up, we shall now discuss some of the ways in which controlled interior lighting units are used to achieve special effects, plus that intangible cinematic quality known as mood.

By *special effects* we do not mean *tricks* which are conjured up in specially equipped departments of professional studios, techniques such as slow motion, optical printing, and miniature photography. Rather, we refer to the unusual lighting patterns which the cinematographer is called upon to design in order to enhance certain out-of-the-ordinary phases of the screen story.

Closely allied in this respect is *mood* lighting, which functions to create a psychological setting for the audience's imagination. Naturally, this type of lighting must only be used in sequences whose dramatic structure calls for such treatment. To force it into a sequence which does not warrant so forceful a technique is to create a much-ado-about-nothing impression in the minds of the audience.

As in any other kind of set illumination, mood lighting must remain consistent with *source*. It is true that the source may be relatively small, such as a candle, oil lamp or an open fireplace—but the cinematographer must first ask himself: "From where is the light coming?" Once having established this basis, he can slant his lighting pattern toward it.

Many non-professional cinematographers become baffled when attempting this sort of lighting, because they walk onto the set and start arranging lights in accordance with a purely mental idea they may have of the desired effect. It is much more efficient to set up the actual situation, if possible, noticing the way the light falls, and then duplicating as closely as possible the highlight and shadow relationship in terms of artificial illumination. In order to reproduce the effect of candlelight, for instance, light a candle on the set and study the effect it creates.

As in any other phase of film production, special effect lighting should not call attention to itself. The moment the audience begins to pay attention to the lighting instead of to the dramatic content of the scene, something will be lost from the effect of the film.

Low-key Lighting

Low-key lighting, characterized by softly lit highlights, and shadows which fall off into dense black, is especially effective when used in sequences dealing with crime, mystery and (paradoxically enough) love. Any dramatic situation in which human emotions are portrayed as "boiling about inside," can usually be helped by low-key.

To be truly effective, a low-key set-up should be arranged in such a way as to point up the main areas of action and play everything else down. This, of course, calls for pre-planning—therefore, the final lighting scheme should not be definitely set until the pattern of action in that sequence has been worked out.

Genuine low-key is usually lit rather softly, harsh black and white contract being avoided. On the other hand, it does not do to use heavy fill light, as the low-key effect will then turn into a washy-washy overall gray pattern.

In lighting low-key, the highlight areas are given *normal* light levels, while the shadow areas are allowed to fall off sharply. There are two schools of thought regarding the exposure of this kind of set-up. Some cinematographers advocate slight underexposure and normal printing. Others advise normal exposure, with the negative later being printed down for a darker effect. The latter theory seems to give the most favorable result, since in this way a greater amount of shadow detail is included on the film—but, in either case, you must be sure to let the laboratory know what effect you are after, or they will overcompensate in printing.

Out-of-balance Lighting

Another style of lighting having a predominance of shadow area, but with a more dynamic quality than straight low-key, is that which is known as *out-of-balance* lighting. This type is characterized by harsh contrast between crystal white and velvet black, with very few intermediate gray tones.

Although somewhat radical in effect, *out-of-balance* lighting is extremely dynamic and is especially adaptable to violent action or dramatic themes. Its stark light and shade patterns are not always flattering to feminine players, but the realistic effect it produces is very suitable for down-to-earth dramatic or documentary subjects.

The effect is achieved through the use of simple, brilliant light sources with little or no *fill* illumination. In its more extreme forms, *arcs* are used to good advantage. The style differs from straight low-key in that it is much harsher in contrast and utilizes more brilliant *key-light*. For this reason, the "glamour" shots which are so effective in softly diffused low-key are almost impossible to achieve in out-of-balance, but the style is most valuable for the illusion of unvarnished reality which it produces.

The Use of Shadow

Many film-makers fail to take advantage of the fact that lighting consists not only of highlights, but of *shadows* as well—and that, skillfully used, shadows can be used with striking effect to point up a screen story.

Basically, shadows give depth and modelling to a subject. Where a set is over-lit in such a way that most of the shadows are cancelled out, the result is usually flat and undramatic. But shadows carefully controlled and with suitable *fill* give roundness and perspective to sets and players.

Shadows can be used to create attractive and dramatic backgrounds. Cardboard cut-outs placed in front of a spot light are the simple materials necessary to project such patterns as prison bars, church windows, venitian blinds, etc. In this way, the suggestion of a full set can be projected upon a bare wall or *flat*, an interesting pictorial background can be achieved, and cinematic mood can be intensified.

Often shadows are used to suggest an active force threatening a character in the story. A player spotlighted in one corner of the screen with a dark mass of shadow engulfing everything else, will convey the impression that the character is being threatened by unknown hostile elements. In a chase sequence, high shadows that dart about with the fleeing character will intensify the furtive nature of the chase.

Sometimes moving shadows can be highly effective, as in a scene where the shadows of trains, cars, or people intermittently cross the players. A light going on and off outside the window of an otherwise dark room creates a highly kinetic effect.

Plane lighting is a style of set illumination in which shadows play a dominant role. This is the kind of pattern in which specific areas and planes of the set are illuminated, the rest being allowed to go dark. The players, moving from one area to another, alternately pass through highlight and shadow in a way which is dramatically striking.

Silhouette, too, is an effective way to use light and shade. It is especially good on close-ups in which the characters are shown in profile. It is useful in emphasizing dialogue where the visual image would otherwise interfere. It is also a good way in which to play down one character in contrast to another who is brightly lighted.

Special Cinematic Effects

There are several special effects which apply to situations that are bound to

(Continued on Page 58)

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Prize - Winning Soviet Films of 1945

By OLEG LEONIDOV

(Editor's Note: This article was received by the American Cinematographer from Moscow and is approved release of the Soviet film industry. It is being published to provide information on activities of Soviet film production.)

SOVIET cinema art is distinguished for its variety of subjects and a wealth of genre. Some films deals with contemporary problems, while others portray the distant past and show our attitude to the life and customs of those times. In addition to screen dramas and monumental epics, there are lively musical comedies.

Soviet films are created, not only by Russian masters, but also by producers and actors of the multi-national family of the Soviet Union. Each republic has its own film studios and trains its own producers, actors, and cameramen. These groups of filmmakers include highly skilled and experienced producers and actors of the older generation, and young graduates of the All Union State Institute of Cinematography; or of cinema studios apprentices just launching on their screen careers.

These characteristic features were fully reflected in the list of feature films and newsreel documentaries of 1945 that won the Stalin prize—annually awarded for outstanding work in the field of art.

Among present Stalin prizewinners are Friedrich Ermler, Vladimir Petrov, and Yuli Raizman, all of whom have been working fruitfully in cinematography from the early years when Soviet feature films were originally started. Their artistic standards are very high, and their films are distinguished for scene composition and excellent mounting. Their casts are exemplary for fine teamwork. However, these qualities in common end here, for each one of them is a highly individual personality.

Ermler is at his best as an impassioned publicist and ardent artist. His are problem films—always revolving around the most vital and even topical subjects. Such is his "Great Citizen," depicting the struggle waged by leaders of states against enemies of the people, trying to hamper the building of the new socialistic society. Of signal interest is his film, "Great Turning Point," awarded the Stalin prize for 1945. Action of the film is in the war period when decisive battles were being fought on the banks of the Volga. Although script writer Boris Chirskov does not name the specific place of action, it's clear to everyone that it is Stalingrad where the Hitlerite divisions met their ill-fated end.

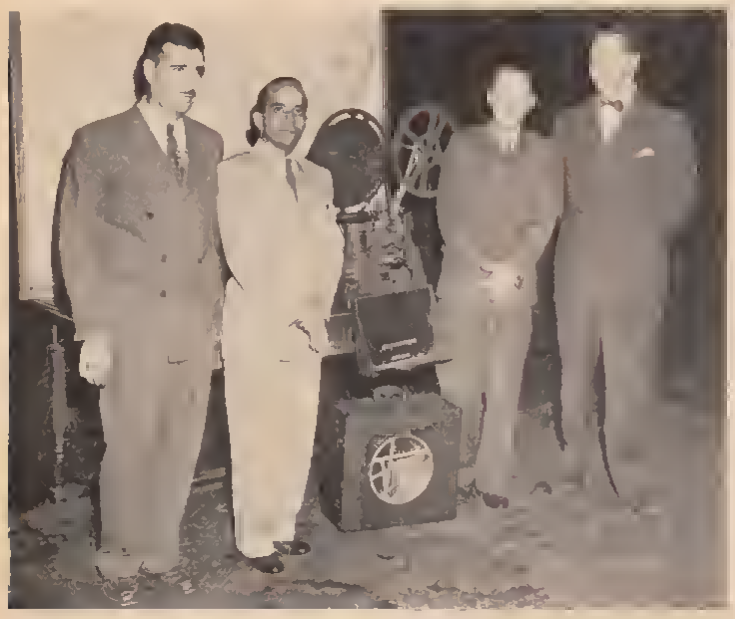
Besides Ermler, as producer of this best film of 1945, Stalin prizes were awarded to scriptwriter Chirskov, cameraman Abraam Koltsaty, artist Nikolai Suvorov, and the players of principal roles; Mikhail Derzhavin of the Vakhtangov theater, and Alexander Zrazhevsky of Moscow Maly theatre.

Producer Vladimir Petrov works in an entirely different style, and with different material. He's known primarily for his historical films ("Peter the First" and "Kutuzov") and screen versions of classic literary works. Several years ago he adapted to the screen Alexander Ostrovsky's play, "Storm," and recently completed production of the same author's play, "Guilty Though Guiltless." Jointly with cameraman Vladimir Yakovlev and artist Vladimir Yegorov, he created the colorful picture of "Life of the Old Russian Provincial Theatre." Film story unfolds the tragedy of a mother forced to part with her illegitimate son, and—after a lapse of many years—finds him again, thus restoring her happiness. Leading role is played by Ala Tarasova, star of the Moscow Art Theatre Peoples Artiste of USSR. The whole cast of "Guilty Though Guiltless" received Stalin prizes.

The third of the older generation of prize winning producers, "Yuli Raizman is well-known for his feature films, "Last Night," and "Mashenka." His work is in soft lyric vein, delicately drawing complex and contradictory feelings. Raizman recently tried a different field—one that seemingly is not his forte—a newsreel documentary of Berlin. However, he coped with this unusual and difficult task just as successfully as his previous feature films. This documentary, showing how the Red Army stormed the last citadel of German Fascism, was mounted exclusively from footage taken by front line cameramen. Although there is no plot or dramatic situations, the film is so beautifully mounted and replete with ingenious bits of directing that it is just as fascinating as a feature film. In addition to Raizman, Stalin prizes were awarded to co-producer Elizaveta Svilova and five cameramen.

In the newsreel documentary classification, Stalin prizes were awarded for three other films. The first—"Defeat of Japan"—was produced by feature film

(Continued on Page 60)



FOREIGN VISITORS AT THE VICTOR ANIMATOGRAPH CORPORATION PLANT at Davenport, Iowa, are in crossing as world travel facilities ease. W. E. Kellogg and L. V. Burrows, service manager and director of distribution, respectively for Victor, are shown with Govind Amonkar of Bombay (in white suit) M-G-M representative for India, and Roy King of Melbourne, executive of Pyrox Pty. Ltd.

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Developments in Optics

(Continued from Page 45)

May I have the next slide, please? (Fig. 3)

You all know that a polished piece of glass reflects light. This chart is put together to show for a number of surfaces, anywhere from zero to twelve, how much light is transmitted, how much is reflected back into the object space, and how much of it appears in the image space as flare. The upper curve is the transmitted light in percentage. For eight uncoated surfaces the transmission is about 65 per cent. With a coated lens with eight surfaces, it is over 90 per cent. The light reflected back into the object space probably does no harm; it is represented by the curves marked "rejected." The light that gets into the image space as flare is represented by the lower curves, reaching the neighborhood of eight per cent for twelve surfaces uncoated, and practically insignificant for coated lenses.

Next slide, please. (Fig. 4)

You have all heard how these films are deposited in the vacuum by evaporation. You have perhaps heard explanations of how they work. This slide is supposed to represent schematically what happens. The upper layer is the film, below that is glass. Light, coming down from the upper left, hits the surface of the film, and presumably some of it is reflected. Then the idea is that some light passes down through the film, hits the film glass surface, and is reflected in such a manner that, if the film is a quarter of a wave length thick, it is presumed that this energy, going up there to the upper right, destroys itself. That is a false conception. If it ever destroyed itself there could be no increase in transmission. It's gone and it's destroyed. But the facts are that, by putting the film on the glass surface, the light that comes through the glass is actually increased. There is no destruction of energy. The energy appears in another direction.

I think the true statement of affairs is that, under these conditions, mathematically it is impossible for light from either one of these surfaces to move in the direction of the upper right, as is shown in this slide.

Next slide, please. (Fig. 5)

This shows a photograph taken of two lenses. The one on the left is an uncoated lens and the one on the right is coated. The one on the left shows reflections and you can't see into the lens at all; the one on the right, by killing off the reflection, shows the diaphragm leaves and the background.

Now we have a picture (Fig. 6a) taken with an uncoated lens and the next view (Fig. 6b) shows the same view taken with a coated lens.

In addition to antireflection applications of these films, there are other uses for them. One thing we can do with them is to increase the reflectivity of

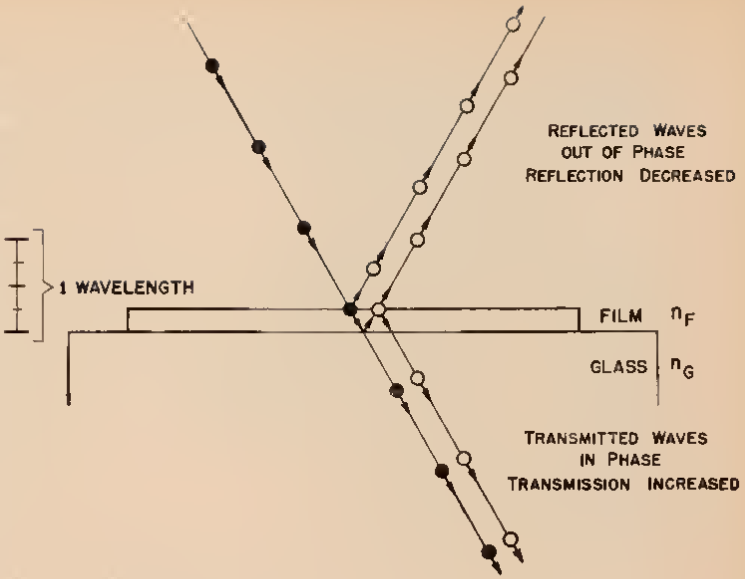

Fig. 3. Transmission losses and usefully transmitted light in unfilmed (uncoated) and filmed (coated) lenses.

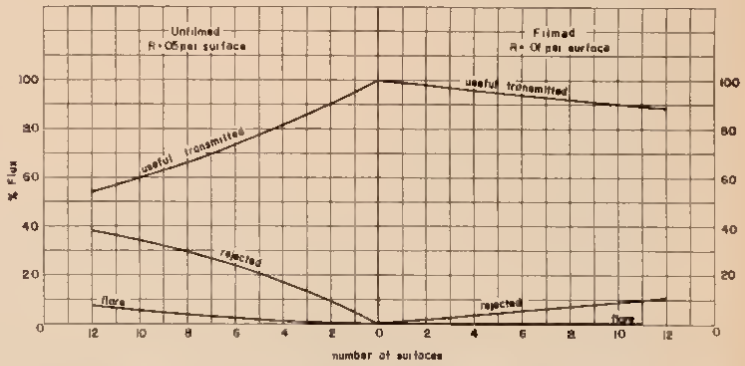

Fig. 4. The action of an anti-reflection film. When the index of refraction (nF) of the film is less than the index of refraction (nG) of the glass the interference of a quarter wave film decreases reflectance and increases transmittance.

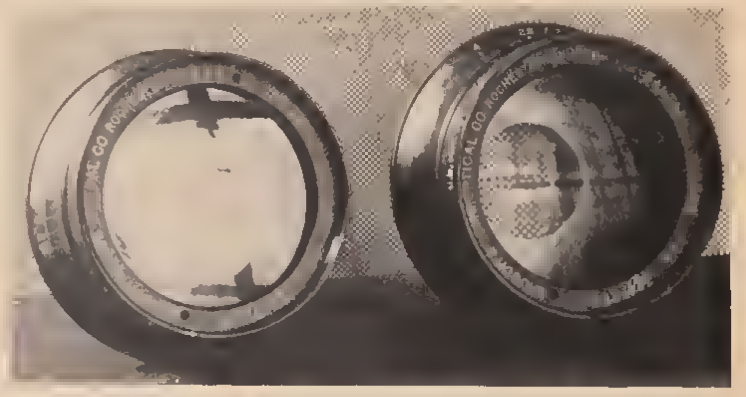

Fig. 5. An uncoated and a coated pair. The coated lens (right) clearly shows the diaphragm and the background.

This photograph, made directly through the Maurer View Finder, was taken on a Maurer 16-mm Camera and enlarged from the 16-mm frame

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a metallic deposit. Aluminum has normally a reflection of about 90 per cent. We have increased that to over 98 per cent by depositing film combinations on the surface. For another application films have been used to produce filters with a very narrow band of transmission. Filters can be designed that transmit a band of wave lengths only 15 millimicrons wide and have a very respectable transmission at their maximum, of say, 30 or 35 per cent.

In approaching the monochromatic filter, heretofore, there has been absorbed energy that is terrifically prohibitive. The new filters seem, therefore, very promising for many applications, and they may have some applications in photography. I don't know what sort of pictures you will get with monochromatic filters, but I feel fairly sure they would not do for general photography, but probably special effects might be found from their use that would be quite interesting.

Another application of thin films is to overcome a difficulty exhibited by some kinds of glass. I have in mind most of the so-called barium crowns and other glasses with high indices and low dispersions, whose surfaces are not remarkably resistant to the atmospheric attacks.

Almost any glass is soluble in water. At least, I will turn it around and say it another way: some of the components of glass are soluble in water. The barium crowns are notably so. We have found, through the study of thin films, a method by which such surfaces can be treated, creating a film on the surface which is not strictly an antireflection film but is an anticorrosion film that will protect those surfaces almost indefinitely. We used such treatment on some of the lenses that we manufactured for aerial photography during the war, with great success. We had not a single lens returned because of the surfaces having corroded.

Now that has to be taken with a grain of salt. Lenses in the South Pacific, in many cases, became unusable. Perhaps some of you were out there and saw that happen. But they were made unusable by conditions that would have made crystalline quartz unusable. Actually the protection afforded to glass by these films is entirely adequate for any ordinary and most extraordinary uses.

What the future holds for thin films, I do not know. I know it is a very profitable field for study and I expect that many things are going to come out of further study of the properties of thin films and the methods of making them.

The third and last deviation from current practice in the field of photography relates to the marketing of diaphragm stops. As you know, it has been customary since the early days of photography to mark the lenses in a series of numbers that indicate the ratio of the effective diameter of the stop to the focal length. The assumption is that that is a figure that measures the brightness of the image. So long as lenses are simple in construction that was pretty generally true, and so long as the requirements of photography were not too precise, the currently used method of marking lenses was entirely satisfactory. You also all know of efforts made here in Hollywood in late years to overcome a situation that results from the fact that lenses do not precisely obey the laws that they were supposed to with regard to the brightness of image.

Lenses have become more complex with more elements, more reflecting surfaces, more glass in them. As a consequence two lenses marked with the same f-numbered may differ quite decidedly in brightness of image. Of course, the introduction of antireflection films complicated the matter very considerably by adding in a factor of anywhere from 25 to 30 per cent, depending upon what kind of a lens it was. So efforts have been made here successfully to overcome that difficulty and to do something leading to a system of calibration such that any two lenses, regardless of focal length, set at the same stop number would give the same exposure.

Before that can be made universal, or even universal within the motion picture field, a little standardizing has to be done. It is possible to design a device with which to measure the brightness of the image formed by any lens at any stop opening on an absolute basis. We have such equipment, and we can calibrate a lens according to any prescribed set of conditions, but two conditions in particular must be prescribed. One is, what are we going to call a normal lens?

All lenses absorb and lose light through reflection. So in thinking about a standard lens we must assign to our standard lens a certain loss of light. Or, let's put it the other way, a certain transmission. I think that a figure of 65 per cent transmission would be a fair figure to adopt for that purpose. It represents the transmission of a lens of substantial focal length of, say, the construction of the Tessar lens uncoated.

The second condition should be related to the fact that short focus lenses covering a wide angle lose light at the marginal field because of the two following factors. One, a cosine factor, so-called, that depends on the angle of the field of view and amounts to quite a considerable number in the case of, say, an angle of 25 degrees off the axis.

The other is the mechanical cutting down of the diameter of the beam of light by the mounts of the front and back elements of the lens. Now if the field of view gets to be very substantial, the reduction in illumination due to those two factors is quite considerable so that at any exposure at a given aperture the center will be darker than the margin of the picture in the negative.

We have to equate this exposure made with such a wide angle lens to one made with a narrow angle lens of long focus in which the density from the center to the edge is practically uniform. Or, at any rate, the grading is far less than it is in the wide angle lens.

Now if the measurement is made by integrated light in the entire picture area and an exposure is made on that basis, it seems inevitable that the cen-

[Continued on Page 66]

Fig. 6a (left) an interior photographed with an uncoated lens. Fig. 6b (right) The same interior photographed with a coated lens. Less flare and greater detail. The "hot spot" between the wings is greatly suppressed.

Is Black and White here to stay?

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NEW 16mm. MASTER EDITING OUTFIT

To meet the demand of amateur movie makers for an editing outfit which will take hard usage and offer the ease of operation and flexibility of professional editing units, the Eastman Kodak Company has just announced that it is now beginning distribution of a Cine-Kodak Master Editing Outfit for 16mm movies.

Combining several editing aids which have heretofore been offered by Kodak only in separate form, the editing outfit now incorporates Cine-Kodak Master Editing Rewind, Cine-Kodak Senior Splicer, and Cine-Kodak Editing Viewer mounted on a 17-pound metal base which provides rock-steady support and 37-inch working space for professional quality editing.

In addition, the Cine-Kodak Editing Bracket, which accepts up to four Cine-Kodak return reels, can be fastened with a wing nut between the viewer and the left rewind spindle.

Both spindles of the rewind are geared for speedy film winding, and film can be wound in either direction. Brakes at the base of each spindle keep winding under smooth control, since finger tip pressure will slow film or stop it whenever desired.

Spindles on the Cine-Kodak Master Editing Outfit accept 16mm. reels up to 1,600 feet. With the Cine-Kodak Editing Viewer, which is an integral part of this outfit, the worker can see every scene in action as the film is edited.

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PRINTERS CRANES LABORATORY EQUIPMENT

Cinema Workshop

(Continued from Page 50)

come up in the course of the average photoplay. These include candlelight, lamplight, firelight, flashlight, etc. We shall analyze methods of stimulating these effects with a minimum of lighting units.

Candlelight—For medium shots where the light source is not shown, use a small, unshielded photoflood (No. 2) placed in the center of the table and screened from the lens by one of the characters in the scene. This will produce an overall glow, simulating the light source of the candle. For a long shot, where the candle is seen, use spotlights (one for each character) cross-played at "candle level" and condensed with *snoots* or *barn doors*. There should also be a spot played downward from directly overhead. For close-ups, use a baby spot or "Dinky inky" (with light diffusion scrim), placed a bit below eye level.

Lamplight—Almost the same set-up as for candlelight (only somewhat brighter) in stationary shots; but when the character moves about the set, a small high-intensity "peanut" bulb can be fastened to the lamp itself on the side not facing the camera. Use an auxiliary spot, focussed softly, to follow the movement about the set as well.

Firelight—Naturally, the fire itself should be the "hottest" part of the scene in angles where it shows. Therefore it is well not to overlight the rest of the scene. For reverse angles, not showing the fire, place your key-light low in the fireplace, simulating the natural source. Use floods or spots with fairly wide diffusion. The flickering effect of firelight can be achieved quite naturally by waving a small leafy twig in front of the light.

Flashlight—This effect is simulated by means of a baby spot with a concentrated beam, which is located out of camera range. The operator must be careful to synchronize the movements of the spot to fit those of the flashlight itself.

Matchlight—In scenes where the character is portrayed as lighting a cigarette the glow can be simulated either by (1) Fading in a concentrated diffused baby spot on the subject's face, or (2) By concealing in the subject's hand a tiny "dashboard" type auto bulb which will give just enough of a glow to simulate the matchlight effect.

The above are the simplest special lighting effects to set up, and also the ones which the advanced amateur or semi-professional will encounter most frequently in his shooting. It is well to remember that a good special effect should go unnoticed *as such*. In any event, where the effect seems too difficult to achieve realistically, it should be discarded and the action changed to accommodate a simpler and more natural effect.

NEXT ISSUE: *Filming in Color.*

"Only Carbon Arcs can produce enough of the brilliant white light required for modern color photography."

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Soviet Films

(Continued from Page 52)

experts Alexander Zarkhi and Joseph Kheifits, and newsreel producer Irina Setkinanesterova. Makers of such remarkable films as 'Deputy of the Baltic" and "Member of Government," Zarkhi and Kheifits are representatives of the second generation of film producers. Due to their vast experience on feature films, they succeeded in portraying in this documentary, not only the defeat of Japanese soldiery by the heroic Red Army and Navy, but also the underlying nature of Japanese imperialism and the spirit of militarism nurtured in the marrow of every Japanese's bones from childhood and constituting the basis of morals, culture and upbringing of the Japanese people. In addition to the producers, the Stalin prize was awarded to five cameramen whose material formed the groundwork of this splendid historical document.

Stalin prizes were awarded to another one of the oldest producers of documentaries—Ilya Kopalin—and the cameramen who worked on "Liberation of Czechoslovakia"—which depicted the friendship of two great Slav peoples and the liberating mission of the Red Army which helped to deliver the Czech populace from the Nazi yoke.

Cameramen who made the colored film in Moscow, "Physical Culture Parade 1945," and achieved such progress in Soviet color cinematography, also received Stalin prizes. Also recipients are a number of younger producers and actors, also Azerbaijan for the musical screen comedy, "Arshin Malalan," made in Baku.

National films produced in various Soviet republics graphically attest to the wide development of creative powers which are now given every opportunity to grow to the fullest extent. The epoch of postwar peaceful construction invests Soviet cinematography with new tasks which Soviet cinematographers, inspired by the encouragement given to them by the people and the government, will do their utmost to accomplish.

Castle Films Acquired by United World

United World Films, subsidiary of Universal Pictures, has acquired Castle Films, pioneer in the sale of 8 and 16 mm prints of film subjects for the home movie market. Deal, which comes only a few months after United World took over the Bell & Howell Filmosound Library (which rents 8 and 16 mm films to non-theatrical accounts), focuses attention on the importance of the miniature film field and indicates policy of United World to become active in all phases of production and distribution.

The Castle organization, headed by founder Eugene Castle, will continue to operate Castle Films, but the latter's present catalogue of approximately 200 subjects will be greatly increased during the coming several years through access to the hundreds of newsreel, travelogue and other subjects in the vaults of Universal Pictures which can be edited into 8 and 16 mm subjects for outright sale to the home movie libraries through camera store outlets which handle the Castle catalogue.

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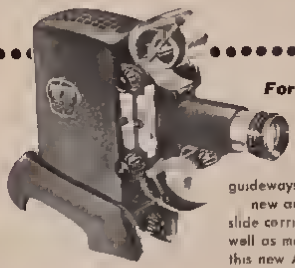

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AMONG THE MOVIE CLUBS

New York Metropolitan

Metropolitan Motion Picture Club of New York City launched its 1947 activities with a splendid film program for the January 16th meeting, held at hotel Pennsylvania. Films unreeled included "Flowering Byways," by Ernest Kremer; "Blue Sky—Small Fry," by Terry Manos; "The Past Master," by George Valentine, "Murder in Central Park," by Macdonald Browne; and "Alpine Vixen," by Anchor O. Jensen

Entries for the novice film contest closed on January 31st, and films will be exhibited at the February meeting for voting by the general membership First, second, and third prizes of $50, $30, and $20—donated by Harry Groedel—will be presented

At the January 8th supplemental meeting, Charles Coles demonstrated the Norwood exposure meter, and illustrated his talk with slides Member Joseph Hartley described his grey card method of reading exposures and exhibited a film demonstrating the procedure

Los Angeles Cinema

Lorenzo del Riccio program chairman for 1947, turned over the January 6th meeting of Los Angeles Cinema Club to James Mitchell Guest speakers were Freddie Smith, film editor of MGM studios, and Fred Gateley of Colonet Productions, who delivered splendid and informative talks on film editing and techniques of cameras and equipment Showings of two prize-winning films, "Arizona Welcomes," by Mrs E B Kellam, and "Glacier Park," by Ray MacMillan followed, and then Messrs Smith and Gateley commented on the composition, continuity, light temperatures, and editing of these two pictures—and both stressed that tripods should always be used by amateur cinematographers.

San Francisco Cinema

Initial 1947 meeting of Cinema Club of San Francisco was held on January 21st at the Women's City Club Film program included: "The Country and Cities of Nova Scotia and Quebec," by Mrs Ray Frick; "Live Steam at Danvers Mass," by Larry Duggan, and "Acrobatic Ballet," "Ballet Waltz" and "San Francisco Ballet," by Miss Meinert

La Casa, Alhambra

With Roy E Wheeler as chairman, January 20th meeting of La Casa Movie Club of Alhambra, Calif., was held in the YMCA building Members' films shown comprised "A Florida Vacation," by Andrew G Orear, and footage of South America, by C K LeFiell

Milwaukee Amateur

Winners in the 1946 club contest were 16 mm division, first, "Summer, 1946," by Norville L Schield; second, "Amen," by Mrs Erma Niedermeyer; and third, "Washington Interlude," by Walter Chappelle Al Wudtke took first place in the 8 mm division with his "Insect Life", "In Commemoration," by Earl Peychal was second; and "Happy Hawan," by Miss Marian Crowley was in third place.

At the December 11 meeting, held at the Red Arrow Club, the 8 mm club production of "Oh Elmer" was shown, in addition to "What Happened?", an 8 mm reel of past club activities. Officers for 1947 were elected at the meeting of January 8th

New York Eight

Helen C. Welsh of the Amateur Motion Picture Society of Albany provided four films made by members of the Albany group for exhibition at the December 16th meeting of New York Eight Club, held at hotel Pennsylvania. Subjects included: "Ampsequences of 1945," a club activity in 8 mm recording all of the parties of the organization, "In the Good Old Summertime," and "Skating — Plain and Fancy," by A J O'Keefe, and "Mardi Gras in New Orleans," by Charles Creamer Member George Valentine displayed his "Summer Souvenirs," and a reel taken from an Alaska airliner was also shown

Philadelphia Cinema

Movie-making members of Philadelphia Cinema Club had a field day at the January 14th meeting, held at Franklin Institute Jim Mancher arranged a short comedy running 50 feet of 8 mm and 100 feet of 16 mm., lighting equipment was set up, and camera-toting members trained their lenses on the action Novel idea was to provide demonstration of the technique of indoor lighting, and to give members personal experience on the subject

San Francisco Westwood

Annual Christmas meeting of Westwood Movie Club of San Francisco was held in St. Francis Community Hall on December 27th Nominating committee presented slate of officers for 1947, and film program comprised "Santa Claus in Person," and "Santa Catalina Island," by Harry Kahn; "Northern Lights," by Leo M Kerkhof, and "Lassen National Park," by Joseph Pissott As usual, coffee and doughnuts were served at conclusion of the meeting

Brooklyn Amateur

Film program for the January 15th meeting of Brooklyn Amateur Cine Club, held at 1218 Union Street, included "Trapper," by Charles Ross, "Song of the Open Road," by Charles Benjamin; and group of colored slides on "Jasper Park" by Eugene Adams John Manfrin exhibited a film for criticism by the film clinic committee, and winners of the 1946 club contest were announced

At the December 4th meeting, program designed to compare Anscolor and Kodachrome resulted in reserved judgment due to unsuitable demonstration films made available for the comparison Charles Benjamin presented a fine demonstration of various examples of good composition at the December 18th meeting; which also included runoff of two 8 mm. films by Terry Manos—"Blue Sky-Small Fry," and "VE Day."

St. Louis Amateur

"Western Days and Nights," by Werner Henze; and "Fifth Christmas," by Lon Wadman, featured the film program of January 14th meeting of Amateur Motion Picture Club of St. Louis, held at the Roosevelt hotel In addition, Wadman gave a timely talk on "What to Do With Your Camera," which provided hints for better movie making According to club announcement, 11th anniversary show of the organization will be held on February 25th

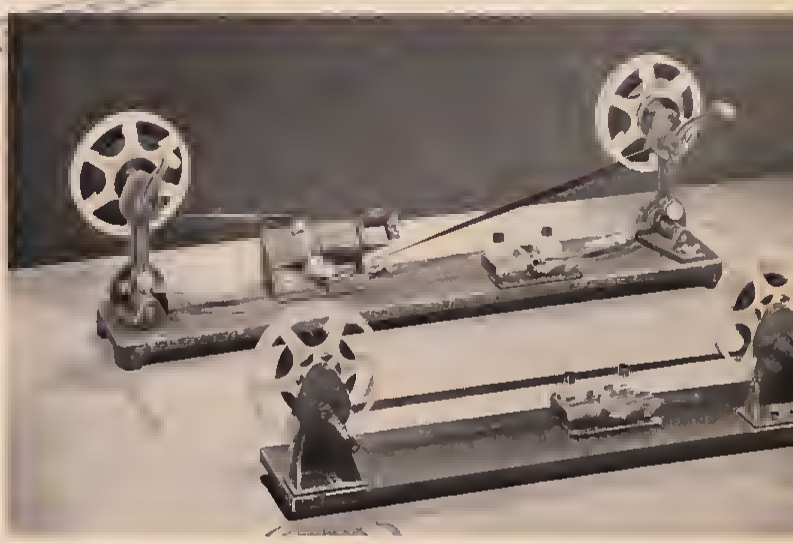
San Francisco Westwood

Annual dinner of the Westwood Movie Club of San Francisco was held at the Del Mar Restaurant on evening of January 25th, at which time officers, elected at the December meeting, were installed Leo M Kerkhof heads Westwood for 1947, Frank Boichot is vice-president, Elsa Luck treasurer, and Edna Spree secretary Feature of the meeting, in addition to the byplay and fun, was the filming of the event, and the exhibition of sound and color reels by Fred Harvey

Los Angeles Eight

Showings of several of the recent annual contest films featured the January 14th meeting of Los Angeles 8 mm Club, held at the Bell & Howell Auditorium Film rental chairman John Boaz announced the purchase of 10 additional films for the club's rental department, and that W. D. Garlock donated a print of "The Life of Edward" Funds for the added films were secured from accrued revenue on other films rented from the club library

NINE MOVIE FEET MAKE A YARD...



Ciné-Kodak Master Editing Outfit (back), a sturdy combination of all-metal Rewind, Splicer, and Viewer, is "taps" for 16mm. editing. Ciné-Kodak Senior Editor (front) accepts both 8mm. and 16mm. film... includes Rewind and the efficient Ciné-Kodak Senior Splicer.

Yes—that's right. Average Hollywood editing practice eliminates about two feet out of every three—for only the very best footage is saved to show.

Amateur movie editing is seldom that exacting. Yet careful film grooming is equally important—and so are good editing aids that will cut hours from your "cutting room" chores.

A choice of editing tools

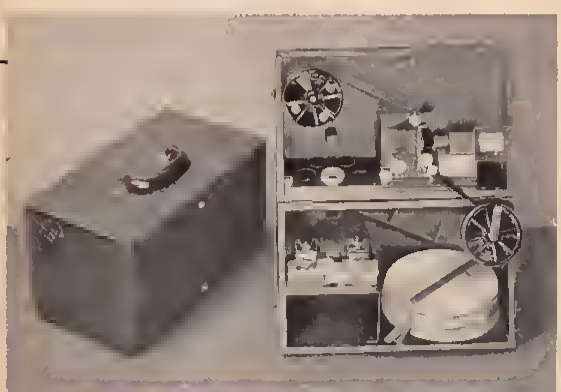
Take the Cine-Kodak Master Editing Outfit for 16mm film for example—and you couldn't take a better one. Here's a rock-steady, all-metal rewind base that accepts any reel up to 1600-foot capacity, winds film in either direction under finger-tip brake control, and includes the timesaving Ciné-Kodak Senior Splicer as well as the Editing Viewer which shows movies on its ground-glass screen.

Then there's the Ciné-Kodak Senior Editor, which is a lighter and somewhat smaller version of the Master Outfit. It takes both 8mm and 16mm reels up to 400-foot capacity. It includes the Splicer but not the Viewer in the basic unit—yet is designed to accept this last item when purchased separately.

A portable cutting room

Or maybe you'd like your editing outfit all wrapped up in a neat *Kodadur* package? You'll vote for the Ciné-Kodak Editing Kit, a suitcase editing room supplied in two models—one for 8mm film and one for 16mm—and combining Rewind, Splicer, Viewer, work tray, film storage space, and the Editor Bracket (also available for use with either of the Rewinds)—which holds up to four processing reels of "feeder" film.

If you have already acquired parts of an editing outfit, you may want to buy one or two of these items individually. Both the Master Editing Rewind and the Senior Editing Rewind can be purchased separately. Or, if you already have a rewind, and can see how the Splicer or Viewer will be of help, they also are available as separate units. Wish we had enough space to describe the ease and certainty of splice-making with the Ciné-Kodak Senior Splicer and of scanning and marking movie scenes or individual frames with the Viewer. Better ask your Kodak dealer for the full story.



Ciné-Kodak Editing Kit—in models for 8mm. and 16mm. movies—is a complete "cutting room" conveniently packed in its own carrying case.

PRICES—Ciné-Kodak Master Editing Outfit, complete with Splicer and Viewer—$71.35; Rewind only—$37.50. Ciné-Kodak Senior Editor, including Splicer—$28.50; Rewind only—$12.50. Ciné-Kodak Editing Kit—COMPLETE—$62.50. Splicer alone—$16. Viewer alone—$23.50.

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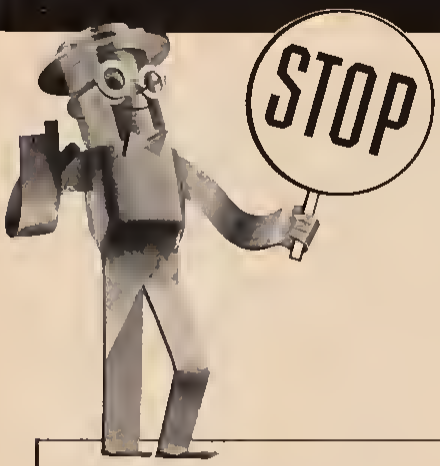

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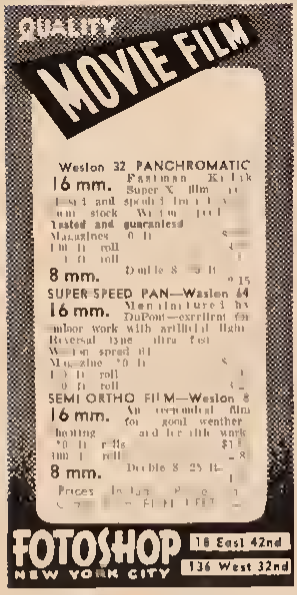


Carson Promoted by Craig

D. D. Carson has been promoted to post of sales manager of Craig Movie Supply Company, Pacific Coast distributors of various lines of motion picture supplies and equipment

Two Methods of Titling

At a recent supplemental meeting of Metropolitan Motion Picture Club of New York, which—by the way—includes in its membership some of the topnotch amateur movie makers of the country, Joe Hollywood and Joseph Harley discussed and demonstrated particularly unusual title-making procedures which are worthy of sketching for the information of those who wish to delve into unusual methods to achieve distinctive titles

Mr Hollywood explained his method which differs from the general commercial titler practice His camera is locked in a frame which aims the former vertically rather than horizontally The title is placed on the floor, or on a plane horizontal to the floor. This permits arrangement of letters without the necessity of fastening them to title card or board with cement, pins, etc Hollywood uses cast metal letters when upper and lower case letters are required, and cut-out cardboard letters for main and end titles The cardboard letters, he pointed out, may be obtained in different styles and sizes, and may be painted any color required with show card water color paints

Special Effect Titles

Joseph Harley described a method he follows for special effect titles The title card is printed black on white This is then photographed and the negative developed This negative, now a black on white, is placed as a window in a specially-made cardboard light box having all white inner walls The latter are lit to the desired intensity, with result that the reflected light shines brilliantly through the negative which serves as a window The camera is focused on the window area and the whole thing shot in regular procedure

Rose Parade Filmed for Television

Tournament of Roses parade at Pasadena was filmed on January 1st by Telefilm Studios for specific televising of the edited footage over station W6XAO within six hours after finish of the parade It was the first time that 16mm pictures were made of the parade especially for television broadcast, and success of the project demonstrates the feasibility of newsreel service for television in the future

Exposed negatives were rushed to the Telefilm laboratories for speedy development, cutting and editing, and preparation of a running commentary script. Experience in this instance indicates that such films of newsreel nature can be completed for television broadcast within three hours in the future

Ansco's New Film For Use In Color Motion Picture Production

At the recent S M P E. Convention a new Ansco film was described by Harsh and Friedman in their paper "Application of a New One-Strip Color Separation Film in Motion Picture Production." The film, which is designated as Type 155, has the unique characteristic of giving equal gammas for the red, green and blue exposures with the same development time. The following is a summary of the paper.

The use of monopack color films such as Ansco Color Film Types 735 and 732 for the original exposure and the release printing stock in the production of motion pictures, poses certain problems in providing the intermediate duplicates or masters which are necessary for protection of the original, for foreign release or special effects.

The specific problem in motion picture color photography with monopack materials is the loss of color saturation when it is necessary to make second, third or fourth generation duplicates to arrive at a release print as is often the case in black and white motion picture practice. Current use of monopack color processes has proven that a direct print from a color original gives color reproduction of satisfactory quality. The primary difficulty in making more than a first generation print is due to the absorption characteristics of the image dyes.

If the intermediates are not made in color, but in the form of black and white separation negatives it becomes possible to obtain accurate records of the color densities as they are present in the originals. After conversion into black and white positives these can be printed upon Ansco Color Printing Film Type 732.

A black and white film particularly suitable for this purpose has been produced and is tentatively designated as Ansco One-Strip Color Separation Film, Type 155. It has the unique property that for the same development time the contrasts for the red, green and blue exposures remain substantially the same. This is equally true for low contrast (0.50) and for high (2.00).

The cyan dye used in Ansco Color Film has a maximum absorption at approximately 6800A. Therefore, the new material has its sensitivity extended in the red to a maximum at 6800A. This enables the use of a Wratten No. 70 filter to yield a red separation that is practically perfect. It is not feasible to use the No. 70 filter with a normal panchromatic film.

The following will describe the practical application of the film in the production of Ansco Color Motion Pictures. The scene is photographed on Ansco Color Film Type 735. This is then copied on Type 155 film using a printer which is equipped with registration pins and capable of skip-frame printing. At this stage fades, lap dissolves and other special effects can be included. The type 155 film is then developed to a gamma of approximately 0.65 in a buffered borax developer of the type used for variable density sound film. The resultant film is now a conformed master containing all the effects and with the color records as successive black and white frames. It will serve as a protection against damage to the original.

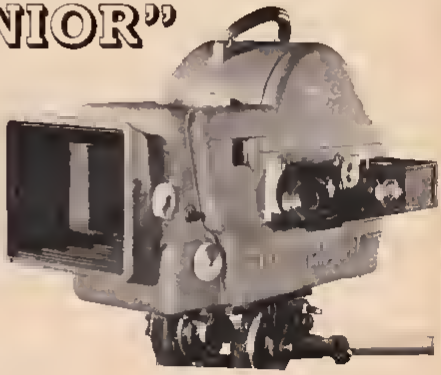
To convert the separation negatives to color prints, they are first printed on standard black and white Duplicating Positive Film on the same optical equipment for making the negatives, and developed to a gamma approximately 1.4. The final step is to print the separation positives onto Type 732 film three times through the appropriate filters. The result is a release print equal in color reproduction to a direct print from the original.

The film can also be applied to direct photography of animated pictures or used for background projection and process photography.

"PROFESSIONAL JUNIOR"

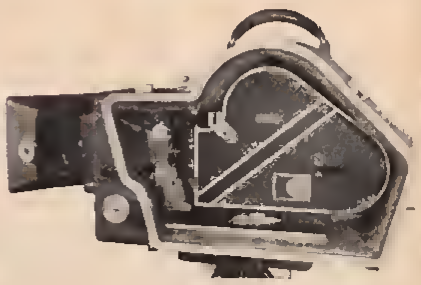
16mm BLIMP

for Eastman Kodak Cine Special Camera



This Blimp constructed of Dow Metal (magnesium) is [illegible] for absolutely silent operation. The blimp has these exclusive features • follow focus attachment for changing lens calibrations while the camera is in operation • viewing magnifier mounted on top of blimp for focusing while camera is mounted in blimp • arrangement for opening camera viewing aperture trap for focusing from the outside of the blimp • pilot lights to illuminate lens calibrations and film footage indicator.

Blimp takes synchronous motor drive which couples to camera [illegible] leather carrying handle mounted at the top. A dovetail bracket [illegible] mount an erect image viewfinder for following action.



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FRANK C. ZUCKER

CAMERA EQUIPMENT CO.

1600 BROADWAY NEW YORK CITY

Developments in Optics

(Continued from Page 56)

ter of the picture in the case of the wide angle lens is going to be overexposed Consequently it is going to be necessary to arrive at some standard practice with regard to what percentage of the area of the picture is going to be used for integrating the light in the image

The Signal Corps Photographic Center Laboratory at Long Island City tackled this problem and decided that for their purposes it would be entirely satisfactory to integrate the light over the circle that can be inscribed in a 35 millimeter motion picture frame Their work was going on under pretty good steam when the war came to an end Practically everybody connected with the work left the Photographic Center, and I do not feel at all that they had reached conclusions that could be generally accepted

If those people had stayed there until this time I am pretty sure they would have had a good story and plenty of evidence to back up any conclusions that they drew But that is at least the basis on which they proceeded and is perhaps as good a basis as any that can be proposed at the present time

From a manufacturer's standpoint, from the standpoint of cost of doing this job, it is not going to be much more expensive to calibrate lenses photometrically than it is geometrically. From that standpoint the manufacturer has no choice or preference one way or the other What is going to happen, however, is that if you have a series of lenses of various focal lengths running from wide angle to long focus, and they all have the same geometrical ratio of aperture to focal length, and they are all calibrated photometrically, then their maximum opening is going to differ all the way along the line

It isn't going to be a nice clean package of a series of f/4 5 lenses or anything like it One of them will be f/4 2 and another one will be f/4.7 and another one f/4 5, which is going to look rather ridiculous except to people who know the circumstances and realize that in that old series of lenses those markings that said f/4 5 on all the lenses didn't give them the same exposure whereas in the new series they will This step is one that remains to be taken, as a matter of fact, and I have little doubt but that it will come to pass. Anything that we can do to promote it we shall be glad to do But we do need a little help from this end before we decide just how it should be done

I think I will leave it there Thank you

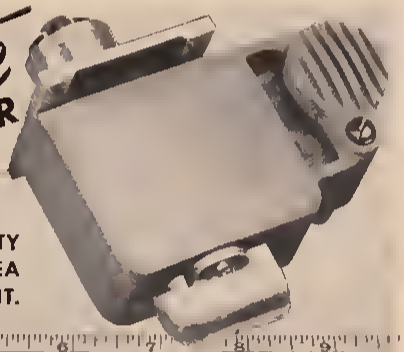
New Special Effects Company Formed

Linwood Dunn, of the RKO studio's printing department, and Charles Berry, previously with the same department at Universal, have organized Filmeffects of Hollywood which will provide professional special photographic effects and optical printing procedure for both 35 mm and 16 mm producers

Berry will personally operate the enterprise, located in the new Acme Film Laboratories building at 1153 North Highland Avenue, Hollywood, which will specialize in precision color and black-and white optical printing—using the Academy Award-winning Acme-Dunn 35-16 mm. optical printer and other special custom built equipment

Filmeffects, in providing specialized optical printing services for producers, will closely cooperate with both the cinematographer and film editor in solving photographic problems on production. In addition, an experimental service will be available for the development of new ideas and practices in the special effects field. Pointing out the years of experience back of the enterprise, a company spokesman stated studio practice will be followed in providing service to the producer and cinematographer for maximum quality of duping, proper balancing of any serious contrast or density variations showing up in final editing, and other phases of optical printing practice

In addition, facilities will be available to the free lance cinematographer for precision and quality process background plates, and for completion of composite trick photography.



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Current Assignments of A. S. C. Members

As this issue of AMERICAN CINEMATOGRAPHER goes to press, members of the A.S.C. were engaged as Directors of Photography in the Hollywood studios as follows

Columbia

Charles Lawton, Jr., "The Lady From Shanghai," with Rita Hayworth, Orson Welles, Glenn Anders.

Edward Cronjager, "Three Were Thoroughbreds" (Technicolor), with Robert Young, Willard Parker, Marguerite Chapman, Akim Tamiroff

Burnett Guffey, "Assignment to Treasury," with Dick Powell, Signe Hasso, Mayha, Ludwig Donath, Vladimir Sokoloff.

Lucien Andriot, "The Corpse Came C.O.D.," with George Brent, Joan Blondell, Adele Jergens

Phillip Tannura, "The Crime Doctor's Vacation," with Warner Baxter, Nancy Saunders.

Metro-Goldwyn-Mayer

Hal Rosson, "To Kiss and to Keep" with Gene Kelly, Marie McDonald, Charles Winninger, Spring Byington, Jean Adair

Harry Stradling, "Song of Love," with Katharine Hepburn, Paul Henreid, Robert Walker

Ray June, "The Birds and the Bees" (Technicolor), with Jeanette MacDonald, Jose Iturbi, Jane Powell, Ann Todd, Edward Arnold, Mary Eleanor Donahue, Harry Davenport

Hal Rosson, "The Hucksters," with Clark Gable, Deborah Kerr, Sydney Greenstreet, Keenan Wynn, Ava Gardner, Adolph Menjou

Charles Rosher, "Song of the Thin Man," with William Powell, Myrna Loy, Keenan Wynn, Jayne Meadows, Leon Ames, Patricia Morison

Monogram

Harry Neuman, "Black Gold" (Cinecolor), with Anthony Quinn, Katharine DeMille, Elyse Knox, Kane Richmond, Raymond Hatton

William Sickner, "Land of the Lawless," with Johnny Mack Brown, Raymond Hatton, Christine McIntyre

James Brown, Jr., "Panic," with Leo Gorcey and the Bowery Boys, Teala Loring, Betty Compson

Paramount

Lionel Lindon, "Variety Girl," with Mary Hatcher, Olga San Juan, DeForest Kelley, Frank Ferguson

John Seitz, "Saigon" with Alan Ladd, Veronica Lake, Douglas Dick, Luther Adler, Morris Carnovsky, Luis Van Rooten, Wally Cassell

Leo Tover, "I Walk Alone" (Hal Wallis Prod.), with Lizabeth Scott, Burt Lancaster, Kirk Douglas, Wendell Corey, Kristine Miller, George Rigaud, Kitty Irish.

Ernest Laszlo "Road to Rio," with Bing Crosby, Bob Hope, Dorothy Lamour, Gale Sondergaard, Frank Faylen, Joseph Vitale

Eagle Lion

L. W. O'Connell, "Repeat Performance," with Joan Leslie, Louis Hayward, Richard Basehart, Tom Conway, Benay Venuta.

RKO

Frank Redman, "If You Knew Susie," with Eddie Cantor, Joan Davis, Allyn Joslyn, Sheldon Leonard, Douglas Fowley, Sig Ruman

Robert de Grasse, "Indian Summer," with Alexander Knox, Ann Sothern, George Tobias, Myrna Dell, Florence Bates, Sharyn Moffett

J. Roy Hunt, "Under the Tonto Rim," with Tim Holt, Nan Leslie

Selznick

Lee Garmes, "The Paradine Case," with Gregory Peck, Ann Todd, Charles Laughton, Charles Coburn, Ethel Barrymore, Louis Jourdan, Joan Tetzel, Leo G. Carrol, Colin Hunter, Valli

Twentieth Century-Fox

Leon Shamroy, "Forever Amber" (Technicolor), with Linda Darnell, Cornel Wilde, Richard Greene, Glen Langan, George Sanders, Margot Grahame

Harry Jackson, "Mother Wore Tights" (Technicolor), with Betty Grable, Dan Dailey, Jr., Mona Freeman, Anabel Shaw, Connie Marshall, William Frawley, Veda Ann Borg, Michael Dunne

Joe MacDonald, "Moss Rose," with Victor Mature, Peggy Cummins, Ethel Barrymore, Vincent Price, Margo Woods, Patricia Medina

Charles Clarke, "It's Only Human," with John Payne, Maureen O'Hara, Porter Hall, Philip Tonge, James Seay, Edmund Gwenn, Gene Lockhart

Joseph LaShelle and Arthur E. Arling, "Captain From Castile (Technicolor), with Tyrone Power, Jean Peters, Cesar Romero, Lee J. Cobb, John Sutton, Antonio Moreno, Thomas Gomez

Charles Lang, "The Ghost and Mrs. Muir," with Gene Tierney, Rex Harrison,

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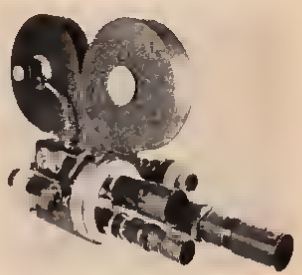

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Benjamin Kline, "The Crimson Key" (Sol Wurtzel Prod.), with Kent Taylor, Doris Dowling, Dennis Hoey

United Artists

Victor Milner, "The Other Love" (Enterprise), with Barbara Stanwyck, David Niven, Richard Conte, Joan Lorring, Maria Palmer, Edward Ashley, Natalie Schaefer, Gilbert Roland.

Karl Struss, "Heaven Only Knows" (Nero Films), with Robert Cummings, Brian Donlevy, Marjorie Reynolds, Joria Curtwright, Stuart Erwin

Franz Planer, "Vendetta" (California Pictures), with Faith Domergue, George Dolenz, Hillary Brooke, Nigel Bruce.

James Wong Howe, "Body and Soul" (Enterprise), with John Garfield, Lilli Palmer, Hazel Brooks, Anne Revere, William Conrad

Vincent Farrar, "Stork Bites Man" (Comet Prod.), with Jackie Cooper, Gene Roberts, Dusty Schilling, Emory Parnell.

Universal-International

Russell Metty, "Ivy" (Sam Wood Prod.) with Joan Fontaine, Patric Knowles, Herbert Marshall, Richard Ney, Sir Cedric Hardwicke, Lucile Watson, Rosalind Ivan, Sara Allgood, Lumsden Hare.

Stanley Cortez, "Secret Beyond the Door," with Joan Bennett, Michael Redgrave

Warners

Arthur Edeson and William Skall, "My Wild Irish Rose" (Technicolor), with Dennis Morgan, Andrea King, Arlene Dahl, Alan Hale, George Tobias, George O'Brien, William Frawley.

Carl Guthrie, "The Woman in White," with Eleanor Parker, Alexis Smith, Sydney Greenstreet, Gig Young, Agnes Moorehead, John Emery, Emma Dunn Curt Bois

Ted McCord, "Deep Valley," with Ida Lupino, Dane Clark, Wayne Morris, Fay Bainter, Henry Hull.

Sid Hickox, "Dark Passage," with Humphrey Bogart, Lauren Bacall, Agnes Moorehead, Bruce Bennett, Tom d'Andrea.

Ernest Haller, "The Unfaithful," with Ann Sheridan, Zachary Scott, Lew Ayres, Steven Geray, Eve Arden, Peggy Knudsen, John Hoyt.

Mood in Films

(Continued from Page 49)

ultra-wide-angle shots, super close-ups, sweeping elevator shots, exaggerated low angles, and radical low-key lighting.

In sharp contrast to these somewhat theatrical devices, however, was his ultra-realistic documentary treatment of "Grapes of Wrath." Here was mood in the fullest sense of the term, for here was a situation re-created with all of the unvarnished reality of its true atmosphere. The effect was gained, not so much through the techniques used, as through those *omitted*. There were no filter shots, no reflectors in the exterior sequences, no attempt to "arty" angles. Lighting was simple and direct, in strict harmony with source. Very little *fill* light was used.

It required professional integrity to film this socially significant story without the usual glamour treatment. But the resulting film carried with it a feeling of realism that was mood in its purest form.

A mood, once established, should pervade the entire sequence. Thus, it acts as a continuity device, leading the audience smoothly and naturally from one scene to another. Properly infused into the production, it is the cinematographer's most forceful device for adding a "sixth sense" to the cinema — one to which moviegoers are sure to react, even if they cannot explain why they do so.

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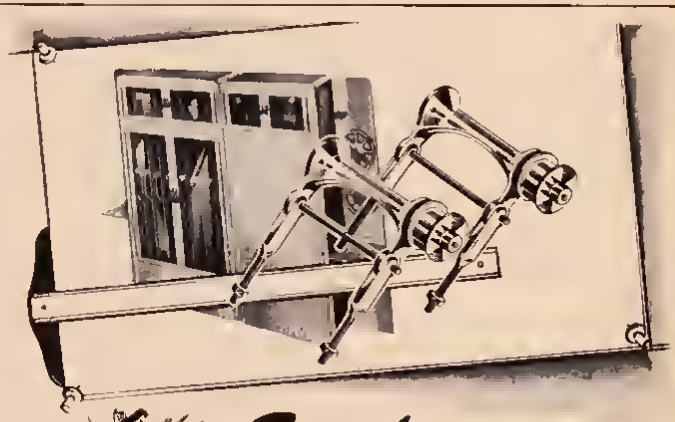

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Photo Highlights—1946

(Continued from Page 47)

ess in Germany, and it was believed that a production program was being continued in eastern Germany under Russian supervision In England, it was reported that the additive motion picture process, Dufaycolor, had been improved during the war, a finer ruling of the screen reseau was said to give superior color rendition

The major portion of the color motion pictures shown in the theaters throughout the world were made by the Technicolor three-color process although several production releases were made by two-color processes such as Cinecolor, Magnacolor, and Trucolor. Since quite complex and bulky apparatus was generally required with all processes that exposed two or three separation negatives in the camera, there appeared to be a growing trend in favor of wider adoption of monopack color film which could be used in less bulky equipment A new 16-mm Kodachrome film was announced in September for use in commercial photography Originals of low contrast made on this product were stated to give superior quality duplicates The latitude and color quality of Kodachrome Duplicating film was also reported to have been improved

Stereo color aerial photographs made by the U S Army Air Forces to show the bomb damage to Japanese industrial targets were shown in Rochester, New York, at the annual exhibition of the Photographic Society of America The pictures were on Kodacolor Aero film exposed in a twin-lens Sonne continuous strip camera They were projected with a twin-lens Polaroid projector and viewed with Polaroid spectacles Amazingly sharp pictures of small objects on the ground such as a magazine cover, playing cards, and a package of cigarettes were taken with a single-lens continuous strip camera from a P-80 U S Army Air Force Jet airplane flying over 500 miles per hour Examples of these pictures were shown on December 8 by Colonel Goddard in a lecture before the Rochester Technical Section of the Photographic Society of America.

Motion Pictures

Although plagued by strikes throughout most of the year, the motion picture industry managed to return to an active productive schedule and motion picture attendance averaged about 85 million paid admissions weekly in the United States Production of motion pictures was also reported to be growing in several South American countries

The twentieth anniversary of the showing of the first commercially successful feature picture with sound was celebrated with appropriate ceremonies on August 6 On that date in 1926 the Warner Brothers production, Don Juan, with musical background, was shown in the Warner Theater, New York From that year forward, sound pictures rapidly displaced silent pictures

The year 1946 also marked the fiftieth anniversary of the first showing of motion pictures in a theater, Koster and Bial's Music Hall New York On April 23, 1896, Thomas Armat, who is generally regarded as the father of the motion picture projector, operated a projection machine of his own design, which embodied certain basic features, such as a loop-forming means, and an intermittent movement that gave relatively longer periods of rest and illumination than the time needed for advancing the film

Technical progress in the motion picture field was reported at meetings of the Society of Motion Pictures Engineers in the United States and the British Kinematographic Society in England About 5000 industrial firms were reported to be using motion pictures for one purpose or another compared with approximately 600 firms before the war, according to an article in *Advertising and Selling* in November.

Standardization

In a summarizing paper in the June issue of the *Journal of the Photographic Society of America*, McNair discussed the development of photographic standards by the Still Photography Committee Z38, the Motion Picture Committee Z22 and the War Committee on Photography and Motion Pictures Z52, of the American Standards Association A substantial background was established as a result of this work on standards for those concerned with practices and equipment manufacture. Many of the data on these new standards were published in the *Journal of the P.S.A.* and the *Journal of the Society of Motion Picture Engineers*

The Photographic Process

The popularity of package chemicals in accurate ready-to-mix form was evident in photographic stores throughout the nation and in the national advertising in leading photographic publications. As new color films and printing processes were introduced, package chemicals were announced for them Ansco provided chemical kits for development of Ansco Color film and Ansco

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A combined developer and fixing bath called Unidel was announced A special hardener known as Hi-Temp was sold for use previous to development which permitted satisfactory processing at temperatures as high as 95°F without any change in the composition of the ordinary developer, rinse or fixer

Several general methods of increasing film speed were described by Miller, Henn, and Crabtree in the November issue of the *Journal of the Photographic Society of America* A preliminary survey of hypersensitization and latensification procedure was made by Sheppard, Vanselow, and Quirk in the June and July issues of the same publication Baumbach and Gausman gave a useful discussion of the chemistry of aluminum and chromium as hardening agents for gelatin in the July number of the *Journal of the Society of Motion Picture Engineers*

Applied and Scientific Photography

In the occupational therapy program of many hospitals throughout the nation, photography was serving a useful purpose to help rehabilitate the war wounded and others who had been injured in accidents in civilian life At some hospitals, a traveling studio, 4 by 6 feet in size, and fitted for all phases of photographic work, was being used to encourage the interest and participation of non-ambulatory patients Repetitive stroboflash photographs were made of normal and of artificial leg movements to help amputees learn to walk. Several thousand color slides were collected by the Color Division of the Photographic Society of America for use in veterans' hospitals

The U S Army Quartermaster Corps reported very satisfactory results with Vectographs (three-dimensional photographs) as a means of evaluating the quality and characteristics of textiles Defects in cloth samples could be shown effectively with the Vectograph, making it unnecessary to ship bulky cloth samples around to different supply depots, as reported in the October issue of *Industrial Standardization*.

High speed photographic studies of "flying fish" in the Pacific Ocean off the Catalina Islands were stated by Edgerton to prove that most species of such fish do not actually fly but rather glide after they eject themselves from the water Several examples of these pictures were reproduced in the August number of *Travel and Camera* (Fig 5)

New Publications

Two new magazines made their appearance *Photographic Age* (business and industrial photography) published by Trans-World Publishing Co, New York and *Travel and Camera* published by U S Camera Publishing Corp, New York

The following new books were published

Figure 5 High speed night photograph of a flying fish during glide exposed with stroboflash equipment in about 1/10,000 second, using miniature speed Graphic camera

This is Photography—T H Miller and W. Brummitt, Garden City Publishing Co, New York

Professional Photography for Profit—C Abel, Greenburg, New York

Photography is a Language—J R. Whiting; Ziff-Davis Publishing Co, Chicago.

Mr Lincoln's Camera Man—R Meridith, C Scribner's Sons, New York.

Photography by Infrared—W. Clark, Wiley and Son, New York, 2nd Edition

Faces of Destiny—Y Karsh; Ziff-Davis Publishing Co, Chicago

The Art of the Motion Picture—J. Benoit-Levy; Coward-McCann Inc, New York.

Synchronized Flashlight Photography —G. L Wakefield and N W. Smith; Fountain Press, London

Mountain Photography—C. D Milner; Focal Press, London.

Okay for Sound—F Thrasher; Duell, Sloan and Pierce, New York.

Illustration credits

Figure 1. Applied Physics Laboratory, Johns Hopkins University

Figure 2. Bausch & Lomb Optical Co., Rochester, N. Y., and Applied Physics Laboratory, Johns Hopkins.

Figure 3 Fauchild Camera and Instrument Corp

Figure 4 Official U S Navy photo

Figure 5. H. E. Edgerton and C M Breder, jr.

Equipment Reported Stolen

More than $20,000 worth of motion picture equipment, together with lenses and accessories, was stolen from the studio and lab of Film Arts Corporation of Milwaukee on January 5th, according to report by that company

Included in the list are two model B Bell & Howell 35mm studio cameras (ser No 60 and No. 122), and three Cine Specials All equipment has three or one inch decal circles, which might be scraped off to provide evidence if offered for sale Complete list of the stolen equipment can be secured by those interested from Film Arts, 725 Wells Street, Milwaukee 3, Wis

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Aces of the Camera

(Continued from Page 43)

aids, but one that set the industry talking in 1920.

Jack Gilbert played his first big part in "Monte Cristo," another early day success photographed by Andriot, and probably the first picture to be made on a large scale.

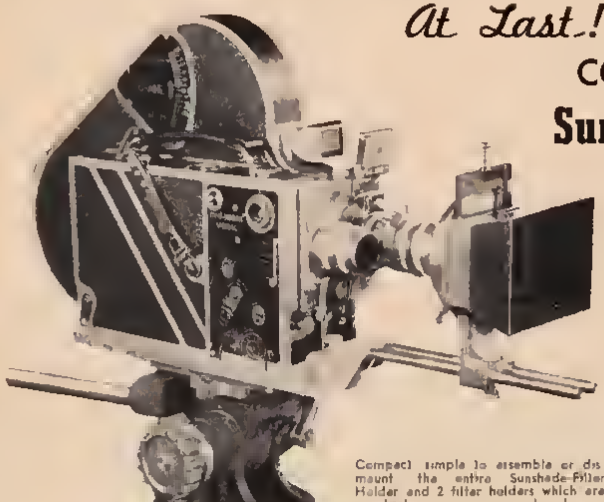
Three or four years later, at M G M, a picture was made that some people still remember for its distinctive photography. It was entitled "In the Palace of a King." Almost the entire action took place on sets with white walls and black lacquered floors. And although the story failed to measure up to the effective photography there are those who still remember it as one of Lucien's artistic contributions to the screen of that day.

Lucien prefers to remember his efforts on behalf of another great American classic, which, for some reason, seems to have fallen into limbo: "Nellie, the Beautiful Cloak Model." For this picture the entire cast, which included Claire Windsor, as Nellie, Lew Cody, Mae Busch, Eddie Lowe, Lillian Tashman and Ray Griffith, traveled from Hollywood to New York where most of the action took place. And when we say action we mean action, as any reader of that onetime best seller will attest. Nellie was subjected to the most horrible treatment possible until the invention of the atom bomb. On one occasion, Lucien recalls, Miss Windsor was tied to the tracks of the elevated railway, where she was supposed to lie unconscious, and therefore perfectly still, while the train bore relentlessly down upon her prone figure. But the director was never quite satisfied. Things were not just the way he wanted them. Miss Windsor, instead of lying still, would give way to spasmodic jerks just as they were about to grind the camera. At last the director could stand it no longer. "What is the matter?" he asked Miss Windsor. "You're supposed to be unconscious. Why do you keep jerking like that?" "Well," said Miss Windsor, "if you really want to know, look down there." And they looked, down through the ties to the street below. And there was a group of boys with sling-shots, and with very good aim, using as a target that part of Miss Windsor's anatomy that protruded from between the ties. When that little extra problem had been disposed of, Nellie went back to being tortured in the orthodox manner until virtue was triumphant in the final fade-out.

Back in Hollywood, for the interiors on the same picture, the script called for a fire scene through which the villains could chase the luckless Nellie. When the studio manager heard what was contemplated he was a little apprehensive. "You're sure you can handle it?" he asked anxiously. "You know, we don't want to burn down the place." "There's nothing to worry about," Lucien assured him, "nothing at all." After all, the crew was going to handle this little spectacle themselves. There were no special effects men in those days and all they had to do was throw a little gasoline around and, just in case, keep some of the boys around with garden hoses. Everything had been planned perfectly.

But somehow the fire began to get too hot. The flames were most realistic but they were getting to be too much even for poor Nellie to work in them. Somebody suggested a bucket of water—quick! "Okey," somebody shouted, and the contents of a bucket performed an arc through the air. But it wasn't water. It was gasoline. And the worst fears of the studio manager were realized. The stage burned down.

Sometimes an unanticipated event proved a blessing in disguise. One such occasion was when Lucien was shooting "The Thundering Herd," for Famous-Players-Lasky. The company was on location up in the hinterlands above Bishop, California; and, judging by the terse notes and messages that were coming in to William K. Howard, the director, the company had been up there entirely too long. "What am I going to do" Howard asked Lucien. "Here I



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am getting notes telling me that I'm over time and over my budget. But I've still got the big scene to shoot. And now look—we're having a snow storm!"

Together Lucien and Howard sat down and re-read the script. "I'll tell you what," said Lucien, "the script describes the wagons and the riders and the herds traveling through the pass, but it doesn't describe the kind of weather. Let's shoot the scene in this snow storm." There wasn't much choice in the matter, and so Howard agreed. The results added drama and spectacle to the scene which turned out to be one of the most outstanding photographed up to that time.

"White Gold," which Lucien photographed for DeMille Productions, was probably the first predominantly exterior picture to be shot on a stage. DeMille was personally engaged in the making of "The King of Kings," at the time and did not want to be disturbed with other matters. Lucien and the director of "White Gold" went out to find their own location.

The requirements were that it be sheep country, and that they found in plenty. But with every advantage they found several disadvantages, until Lucien suggested bringing the sheep to the studio instead of the studio going to the sheep. The idea seemed crazy, but when Lucien assured the director that it would be possible to shoot this outdoor picture indoors the two of them sold the idea to the studio manager. But only on condition. He confined them to one stage. He made it very emphatic that he didn't want sheep wandering about everywhere on the lot and getting mixed up with the "King of Kings."

And so the four walls of one stage were hung with a cyclorama, the sets erected, and without moving from that one stage "White Gold" was completed.

Back at Fox, Lucien's first step into the era of sound pictures was "Christine," a vehicle starring Janet Gaynor. Actually, this production was started as a silent picture but, as "talkies" seemed to be catching on, the producer decided to dub in sound later. Then came "Daddy Longlegs," starring Janet Gaynor and Warner Baxter. And after that, "The Valiant," which was the first Paul Muni picture, an excellent three-reeler. So good in fact that it was decided to pad it out and make a feature of it. Which was unfortunate because the material that made an excellent three-reeler, as so frequently happens, made a very poor feature.

For R K O Andriot photographed the late John Barrymore in "Topaz," and then Lionel Barrymore, with the help of a McGee, in "The Return of Peter Grimm." We hasten to explain that a McGee is an invention of Lucien's that permits him to photograph a ghost image simultaneously with the rest of the "solid" action. Then he did "Prestige," starring Ann Harding.

Some memorable scenes in the desert were among his contributions to the Lasky-Pickford picture, "The Gay Desperado," starring Leo Carrillo, Ida Lupino and Nino Martini. Then he returned once more to Fox to do a series of musicals starring Alice Faye, such successes as "On the Avenue" and "Thanks for Everything."

"Earthbound," in which almost the entire action was between "solid" characters and ghost images was accomplished in, for this type of picture, the astounding time of 30 days. Thanks once again to the McGee and, Lucien hastens to add, the wonderful cooperation and technical understanding of Rolla Flora, A S C.

Following that was "I'll Give a Million," with Peter Lorre and Warner Baxter, and "Cafe Metropole," with Tyrone Power and Loretta Young.

Columbia borrowed him to do "I'll Take Romance," starring Grace Moore and Melvyn Douglas, and on another loan out he made, with the great French director Jean Renoir, that contender for Academy laurels, "The Southerner." Again, he was borrowed by Rene Clair to do "Ten Little Indians" which was released under the title, "Then There Were None."

Following a growing trend among other leading artists, directors and cameramen Lucien recently decided to freelance. Encouraged by the growth of independent production he believes it gives the cameraman, no less than star or director, a freer means of expression. In this new capacity he has completed for Hunt Stromberg, "The Strange Woman," starring Hedy Lamarr, and, with the same star, "Dishonest Lady." With the release of "New Orleans," starring Louis Armstrong and Arturo de Cordoba, the concensus of opinion will undoubtedly be that Lucien made a step in the right direction.

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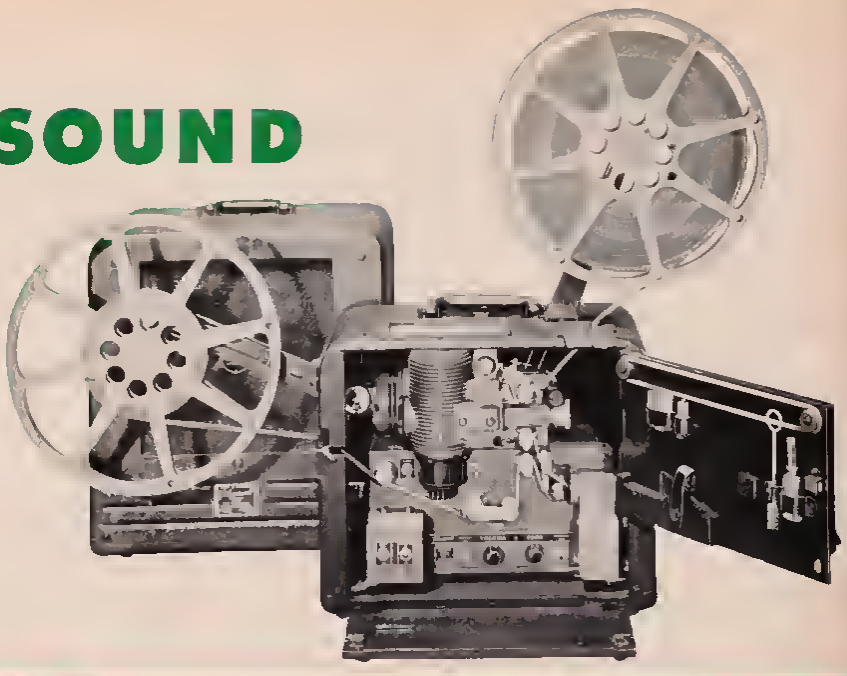

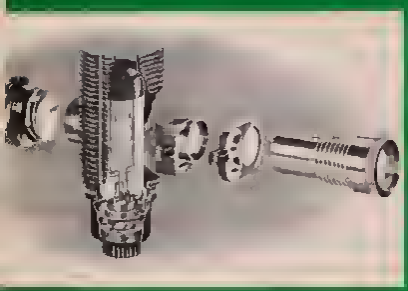

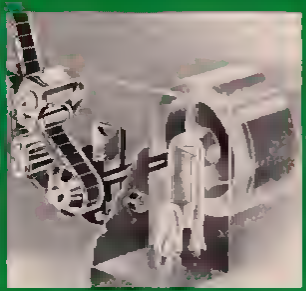

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